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CONTENTS

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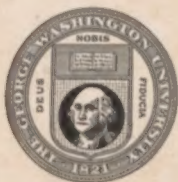
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Comptroller's Report 1950

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THE SUMMER SESSIONS

1930

THE
GEORGE
WASHINGTON
UNIVERSITY
BULLETIN

VOL. XLIX

No. 2

THE SUMMER SESSIONS

WASHINGTON, D. C.

PUBLISHED IN APRIL
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BY THE UNIVERSITY

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CALENDAR OF THE SUMMER SESSIONS CONTENTS

	PAGE
CALENDAR OF THE SUMMER SESSIONS.....	vi
THE UNIVERSITY	1
The Board of Trustees	3
Officers of Administration	4
History and Organization	6
Academic Status	6
Location	7
Educational Facilities	8
Other Library Facilities in Washington	8
Research Facilities of Washington.....	8
THE SUMMER SESSIONS.....	9
Staff of Instruction	11
Admission	16
Registration	17
Fees and Financial Regulations	17
University Regulations	19
Student Life	20
Veterans Education	21
THE COLLEGES, SCHOOLS, AND DIVISIONS.....	23
The Junior College	25
Columbian College (the senior college).....	25
The Graduate Council	27
The Law School	27
The School of Engineering	28
The School of Education	28
The School of Government	29
Foreign Service Examination Review Course	29
The Division of University Students	30
The Division of Special Students	30
COURSES OF INSTRUCTION	31
SCHEDULE OF CLASSES	67
INDEX	77

CALENDAR OF THE SUMMER SESSIONS *

1950

Date	Day	Occasion
May 8	Monday	Preregistration of students registered in the winter term
June 5	Monday	Registration of new students for the first session and the fifteen-week term
June 6	Tuesday	First session and fifteen-week term classes begin
July 4	Tuesday	Independence Day. Holiday
July 31	Monday	First summer session ends
Aug. 1	Tuesday	Registration for the second session of the summer term
Aug. 2	Wednesday	Classes begin
Aug. 7	Monday	Last day for applications for degrees to be conferred in November
Aug. 26	Saturday	Foreign-language examinations for the candidates for Master's degrees
Aug. 28	Monday	Last day for receiving theses for the Master's degrees and for the professional degrees in Engineering to be conferred in November
Sept. 4	Monday	Labor Day. Holiday
Sept. 15	Friday	Fifteen-week term ends
Sept. 22	Friday	Second summer session ends
Sept. 27-29 ..	Wednesday through Friday	Registration for the fall term of the academic year 1950-51

* The calendar for the Law School is as follows: first session, June 5-August 1; second session, August 2-September 26; Sixteen-Week term, June 5-September 26.
The calendar for the special sessions of the School of Education is as follows: Presession, June 12-30; Special Six-Week Session, July 3-August 11; Postsession, August 14-September 1; Special Session—Elementary Education, June 5-September 1. Registration for each of these sessions is held on the first day of classes.

THE BOARD OF TRUSTERS

The Board of Trustees of the University of Wisconsin is composed of the President and the Trustees of the University as officers and ex-officio members.

1890-1891. John H. Thompson, D.D., Chairman.

1891-1892. John H. Thompson, D.D., Secretary.

1892-1893. John H. Thompson, D.D., Ex-Officio, President.

1893-1894. John H. Thompson, D.D., Ex-Officio, President.

1894-1895. John H. Thompson, D.D., Ex-Officio, President.

1895-1896. John H. Thompson, D.D., Ex-Officio, President.

1896-1897. John H. Thompson, D.D., Ex-Officio, President.

1897-1898. John H. Thompson, D.D., Ex-Officio, President.

1898-1899. John H. Thompson, D.D., Ex-Officio, President.

1899-1900. John H. Thompson, D.D., Ex-Officio, President.

1900-1901. John H. Thompson, D.D., Ex-Officio, President.

1901-1902. John H. Thompson, D.D., Ex-Officio, President.

1902-1903. John H. Thompson, D.D., Ex-Officio, President.

1903-1904. John H. Thompson, D.D., Ex-Officio, President.

1904-1905. John H. Thompson, D.D., Ex-Officio, President.

1905-1906. John H. Thompson, D.D., Ex-Officio, President.

1906-1907. John H. Thompson, D.D., Ex-Officio, President.

1907-1908. John H. Thompson, D.D., Ex-Officio, President.

1908-1909. John H. Thompson, D.D., Ex-Officio, President.

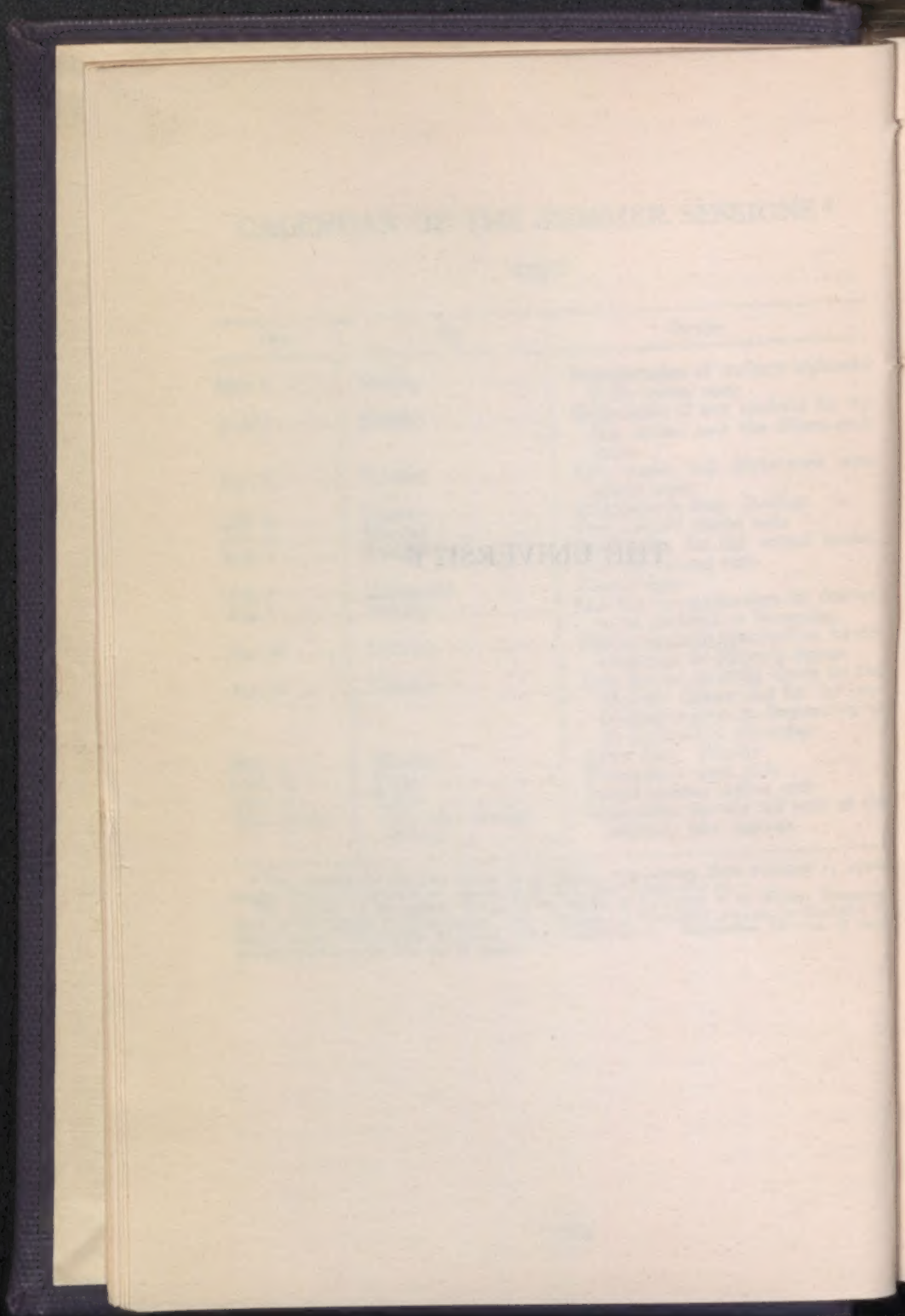
1909-1910. John H. Thompson, D.D., Ex-Officio, President.

1910-1911. John H. Thompson, D.D., Ex-Officio, President.

1911-1912. John H. Thompson, D.D., Ex-Officio, President.

1912-1913. John H. Thompson, D.D., Ex-Officio, President.

THE UNIVERSITY



THE BOARD OF TRUSTEES

The Board of Trustees of the University is composed of the President and Vice-President of the University ex officio and the following persons by election:

Robert Vedder Fleming, LL.D., *Chairman*

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*Brooks Hays, A.B., LL.B., LL.D.

John Edgar Hoover, LL.M., LL.D.

*Frank Atherton Howard, B.S. in M.E., LL.B.

Alfred Henry Lawson, LL.B.

Benjamin Mosby McKelway

*Claude Worthington Owen, LL.M.

Mrs. Henry Alvah Strong, LL.D.

Walter Rupert Tuckerman, A.B., LL.B.

Alexander Wetmore, Ph.D. Sc.D.

*Charles Stanley White, M.D., Sc.D.

Lloyd Bennett Wilson

* Nominated by the Alumni.

OFFICERS OF ADMINISTRATION

THE UNIVERSITY

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Ulysses S. Grant, 3d, B.S., *Graduate United States Engineers School,*
Vice-President
Harold Griffith Sutton, M.S., *Director of Admissions*
Fred Everett Nessell, A.B., *Registrar; Secretary of the Faculties*
John Russell Mason, B.S. in L.S., A.M., *Librarian; Curator of Art*
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Donald David Blanchard, B.C.E., *Business Manager*
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Virginia Randolph Kirkbride, A.M., *Director of Activities for Women*
Alan Thomas Deibert, A.M., *Adviser to Students from Foreign Countries*
Mitchell Dreese, Ph.D., *Dean of the Summer Sessions*
Daniel LeRay Borden, A.M., M.D., *Director of Health Administration*
Lester Allan Smith, A.M., *Director of Alumni Relations*
John Rust Busick, A.B., *Director of Public Relations*
Don Carlos Faith, A.M., *Director of Veterans Education*
Benjamin Douglass Van Evera, Ph.D., *Coordinator of Scientific Activities*
Burnice Herman Jarman, A.M., Ed.D., *Special Assistant to the President*

THE COLLEGES, SCHOOLS, AND DIVISIONS

Myron Law Koenig, Ph.D., *Dean of the Junior College*
Henry Grattan Doyle, A.M., LL.D., Litt.D., *Dean of Columbian College*
Robert Whitney Bolwell, Ph.D., *Chairman of the Graduate Council*
Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Dean of the School of*
Medicine
Oswald Symister Colclough, B.S., LL.B., LL.D., *Dean of the Law School*
Frederick Morris Feiker, B.S. in E.E., D.Eng., *Dean of the School of*
Engineering
Charles Watson Bliven, M.S., *Dean of the School of Pharmacy*
James Harold Fox, A.M., Ed.D., *Dean of the School of Education*
Arthur Edward Burns, Ph.D., *Dean of the School of Government*
Elmer Louis Kayser, Ph.D., LL.D., *Dean of the Division of University*
Students; University Marshal
Warren Reed West, Ph.D., *Dean of the Division of Special Students*
William Lewis Turner, A.M., *Assistant Dean of the Junior College*

Katharine Rogers Adams, Ph.D., *Assistant Dean in the Junior College*
George Martin Kochl, A.M., *Assistant Dean in the Junior College*
Carr Bartleson Lavell, A.M., *Assistant Dean in the Junior College*
Calvin Darlington Linton, Ph.D., *Assistant Dean of Columbian College*
Carl Hugo Walther, B.E., M.C.E., *Assistant Dean of the School of
Engineering*

THE UNIVERSITY

HISTORY AND ORGANIZATION

The idea of a university in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

Columbian College in the District of Columbia was chartered by an act of Congress of February 9, 1821. In 1873 the name was changed to "Columbian University" and in 1904 to "The George Washington University".

The George Washington University includes twelve colleges, schools, and divisions, as follows:

The Junior College offers the work of the first two years of the four-year college program in the liberal arts and sciences; two years of pre-professional work; and two-year terminal courses. Each of these curricula leads to the degree of Associate in Arts.

Columbian College offers the work of the junior and senior years of the four-year college program in the liberal arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. It also offers the studies leading to the degrees of Master of Arts and Master of Science in the fields of the liberal arts and sciences.

The Graduate Council offers a program of advanced study and research leading to the degree of Doctor of Philosophy.

The School of Medicine offers work leading to the degree of Doctor of Medicine.

The Law School offers professional and graduate courses leading to the degrees of Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

The School of Engineering offers courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering. It also directs work leading to the professional degrees in the fields of civil, electrical, and mechanical engineering.

The School of Pharmacy offers courses leading to the degrees of Bachelor of Science in Pharmacy and Master of Science in Pharmacy.

The School of Education offers undergraduate programs leading to the degrees of Bachelor of Arts in Education, Bachelor of Science in Home Economics, and Bachelor of Science in Physical Education, and graduate studies leading to the degrees of Master of Arts in Education and Doctor of Education.

The School of Government offers undergraduate programs of study in Foreign Affairs, Accounting, Business Administration, and Statistics, leading to the degree of Bachelor of Arts in Government. Graduate work leading to the degree of Master of Arts in Government is offered in these fields and also in Government and Economic Policy, Public Administration, Personnel Administration, and Vocational Counseling.

The Division of University Students makes available courses for mature students, not candidates for degrees in this University.

The Division of Special Students makes available courses for students in the process of qualifying for degree candidacy.

The Summer Sessions.

ACADEMIC STATUS

The George Washington University is on the final approved list of the Association of American Universities. This fact not only assures to students the academic standards of this association, but also is important to those who desire to transfer credits from one institution to another.

The University is also accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools, and is on the approved list of the American Association of University Women.

The Law School is a charter member of the Association of American Law Schools and is approved by the Council of Legal Education of the American Bar Association. The School of Medicine is a member of the Association of American Medical Colleges, and is one of the medical colleges which have been designated continuously as "class A" by the American Medical Association. The School of Pharmacy is accredited by the American Council on Pharmaceutical Education and is a member of the American Association of Colleges of Pharmacy. The School of Engineering is on the accredited list of Engineers' Council for Professional Development.

LOCATION

The George Washington University is in downtown Washington, four blocks west of the White House and east of the Potomac River with its extensive parkway. Readily accessible to the University are many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department

of the Army, the Department of the Navy, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor, as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Gallery of Art, and the Corcoran Gallery of Art.

EDUCATIONAL FACILITIES

Buildings, grounds, and equipment of the University are valued at over \$17,000,000. The buildings of the colleges, schools, and divisions offering Summer Sessions work are in the vicinity of Twenty-first and G Streets, NW.

The University Library.—The University Library contains more than 175,000 volumes, and with the exception of the law and medical collections is housed in the Library Building.

Regulations governing the use of the library, the circulation of books, and the use of reserve books and periodicals are available at the service desks of the Library.

OTHER LIBRARY FACILITIES IN WASHINGTON

The student has access also to the Library of Congress, the Public Library of the District of Columbia and its branches, the Library of the Pan American Union, the Library of the Bureau of Railway Economics, the Library of the United States Department of Agriculture, the Library of the United States Office of Education, the Army Medical Library, the Library of the Smithsonian Institution, and many other great special collections of the government departments.

RESEARCH FACILITIES OF WASHINGTON

The arrangement of the summer schedule of classes permits the full-time student to avail himself of the opportunity to study, at first hand, the working of the Federal Government and so to form a background for intelligent and useful citizenship.

In the departmental libraries of the Federal Government are a multitude of reports made by eminent specialists in all fields of science on the results of study and research in the bureaus, experimental stations, laboratories, museums, and observatories of the Nation.

In addition to the governmental collection the student has access to the research facilities of such scientific and educational groups, whose headquarters are situated in Washington, as the Carnegie Institution, the American Council on Education, the American Council of Learned Societies, the National Academy of Sciences, the National Research Council, the National Education Association, and the National Geographic Society.

THE SUMMER SESSIONS

1950

STAFF OF INSTRUCTION IN THE SUMMER SESSIONS

- Sherman Raymond Abrahamson, Ph.D., *Lecturer in Geography*
 Caroline Lander Adams, Ph.D., *Lecturer in Botany*
 John Gage Allee, Jr., A.M., *Assistant Professor of English*
 Antonio Alonso, A.M., *Associate Professor of Spanish*
 Norman Bruce Ames, M.S., E.E., LL.B., *Professor of Electrical Engineering*
 Roberta Shewmaker Barnes, A.M., *Lecturer in Education*
 James Gwavas Beckerley, Ph.D., *Professorial Lecturer in Physics*
 Carville Dickinson Benson, A.B., LL.B., S.J.D., *Professor of Law*
 Ross North Berkes, Ph.D., *Professorial Lecturer in Political Science*
 Lee Sheward Bielski, A.M., *Instructor in Speech*
 Charles Edward Bish, A.M., Ed.D., *Professorial Lecturer in Education*
 Harold Jerome Bobys, A.B., *Lecturer in Business Administration*
 Robert Whitney Bolwell, Ph.D., *Professor of American Literature*
 Lewis Edward Boroughs, LL.B., LL.M., *Assistant Professor of Law*
 Paul William Bowman, Ph.D., *Professor of Biology*
 Carlton Ernest Brett, A.M., *Instructor in English Composition*
 John Frederick Brougher, A.M., Ed.D., *Lecturer in Education*
 Thomas Benjamin Brown, Ph.D., *Professor of Physics*
 James Leonard Buckler, A.B., *Lecturer on Accounting*
 Jaqueline Chevallaz Buhrman, A.M., *Instructor in French*
 John Patrick Burke, A.B., LL.B., *Associate Professor of Law*
 Arthur Edward Burns, Ph.D., *Professor of Economics*
 Willard Edmund Caldwell, Ph.D., *Assistant Professor of Psychology*
 Robert Dale Campbell, Ph.D., *Associate Professor of Geography*
 Arthur Castner Christman, Jr., M.S., *Instructor in Physics*
 James Harold Coberly, Ph.D., *Assistant Professor of American Literature*
 Nicholas Trephon Cokenias, A.M., *Associate in German*
 Charles Sager Collier, A.B., LL.B., S.J.D., *Professor of Law*
 Robert Carter Cook, *Lecturer on Genetics*
 Robert McKinney Cooper, Ph.M., J.D., *Associate Professor of Law*
 Jean McQuiston Coover, A.M. in Ed., *Instructor in Physics*
 Benjamin Carpenter Cruickshanks, B.S. in M.E., *Professor of Mechanical Engineering*
 Edwin Wallace Davis, Ph.D., *Lecturer in Psychology*
 James Forrester Davison, A.B., LL.B., LL.M., S.J.D., *Professor of Law*
 Roderic Hollett Davison, Ph.D., *Associate Professor of European History*

Herman Israel Orentlicher, A.B., LL.B., *Associate Professor of Law*
 Theodore Peter Perros, M.S., *Instructor in Chemistry*
 Calvin Weir Pettit, Ph.M., *Assistant Professor of Speech*
 Ewing Lakin Phillips, Ph.D., *Assistant Professor of Psychology*
 Merle Irving Protzman, Ph.D., *Professor of Romance Languages*
 Jean Alfred Pulver, L.-ès-L., *Associate in French*
 G. Kenneth Reiblich, Ph.D., J.D., LL.M., *Visiting Professor of Law*
 Russell Ronald Reno, A.B., LL.B., LL.M., *Visiting Professor of Law*
 Floyd Millard Riddick, Ph.D., *Lecturer in Political Science*
 Thomas Edmond Robinson, A.M., Ed.D., *Professorial Lecturer in Education*

Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*
 Blake Smith Root, A.M., Ed.D., *Associate Professor of Education*
 Mary Carman Rose, A.M., *Instructor in Philosophy*
 Ralph Windsor Ruffner, A.M., Ed.D., *Associate Professor of Education*
 William Frederick Sager, Ph.D., *Assistant Professor of Chemistry*
 Edward Henry Sehrt, Ph.D., *Professor of German*
 Ernest Sewall Shepard, A.M., *Professor of English Literature*
 Waldo Edward Smith, B.E., M.S. in C.E., *Professorial Lecturer in Civil Engineering*

Ira Ernest Steele, B.B.A., A.M., *Lecturer on Accounting*
 Edward Stephens, B.S., LL.B., LL.M., *Professorial Lecturer in Business Administration*

Edwin Lockwood Stevens, A.M., *Assistant Professor of Speech*
 Jonathan Dayton Stoddart, A.M., *Instructor in Political Science*
 George Winchester Stone, Jr., Ph.D., *Professor of English Literature*
 John Sentman Strahorn, A.B., LL.B., S.J.D., *Visiting Professor of Law*
 Rafael Supervía, Doctor en Derecho, *Assistant Professor of Spanish*
 Charles Wilson Taintor II, A.B., LL.B., LL.M., S.J.D., *Visiting Professor of Law*

James Henry Taylor, Ph.D., *Professor of Mathematics*
 John Albert Tillema, Ph.D., LL.M., S.J.D., *Professor of Political Science*

William George Torpey, Ph.D., *Lecturer on Public Administration*
 Lester Wendell Trueblood, A.M., *Lecturer in Geography*
 Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 Elizabeth June Uelsmann, A.M., *Instructor in Spanish*
 Benjamin Douglass Van Evera, Ph.D., *Professor of Chemistry*
 Alberto Vázquez, Ph.D., *Lecturer on Spanish American Literature*
 Alice Sylvia Venezky, Ph.D., *Instructor in English Composition*
 Robert Corbin Vincent, Ph.D., *Associate Professor of Chemistry*
 Donald Stevenson Watson, Ph.D., *Professor of Economics*
 David Benson Weaver, A.B., LL.B., *Assistant Professor of Law*
 Frank Mark Weida, Ph.D., *Professor of Statistics*

Warren Reed West, Ph.D., *Professor of Political Science*
Thomas Arthur Wiggins, M.S., *Instructor in Physics*
Alva Curtis Wilgus, Ph.D., *Professor of Latin American History*
Earl Larkin Williams, A.M., *Lecturer in Mathematics*
Edith Louise Williams, A.M., *Instructor in English Composition*
Harold Maurice Wilson, A.M., *Lecturer in Education*
Juanita May Winn, A.M., *Lecturer in Education*
Reuben Esselstyn Wood, Ph.D., *Assistant Professor of Chemistry*
Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
Kennett William Yeager, Ph.D., *Assistant Professor of Sociology*
Lawson Edwin Yocum, Ph.D., *Professor of Botany*
Kenneth H. York, A.B., LL.B., *Professorial Lecturer in Law*
Donnell Brooks Young, Ph.D., *Professor of Zoology*

due with the tuition fee for the course. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee, the individual student will be required to pay such additional charges as are determined by the department concerned.

GRADUATION FEES

Wherein the degree of Associate in Arts is granted.....	10.00
Wherein a degree other than the Associate in Arts degree is granted.....	20.00

FEE FOR BINDING MASTER'S THESES.....	4.00
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SPECIAL FEES

Application fee, charged all new applicants for admission, non-refundable	3.00
Aptitude test fee.....	1.00
Late-registration fee, for failure to register within the designated period.....	5.00
Service fee, for late payment of tuition (see "Payment of Fees")....	1.00
Reinstatement fee, for reinstatement after suspension for delinquency in fees	5.00
For each examination to qualify for advanced standing, and for each special examination	5.00
Laboratory checkout fee, charged all students in chemistry and pharmacy courses who fail to check out of the laboratory by the time set by the instructor.....	2.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the day of regular registration.....	5.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of three certified transcripts of record, if and when desired; (2) the use of the University library facilities, except as otherwise designated; (3) medical and hospital services described below. These privileges, with the exception of the issuance of transcripts, cease when the student withdraws or is dismissed from the University.

Medical and Hospital Services.—These services include: (1) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examinations; (2) hospitalization, including board, and nursing in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each session are due in advance at the time of preregistration in the case of former students; at the time of registration in the case of new students.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Registrations, except for courses which extend throughout one unbroken term of fifteen or sixteen weeks, are for the session, and no refunds or rebates are allowed, unless the registration is in advance and the course is dropped before the day of registration for the session involved.

A student who preregisters and withdraws prior to the date of regular registration will be charged a withdrawal fee of \$5.

If notice of withdrawal or change in schedule involving courses which extend over an unbroken term of fifteen or sixteen weeks is received by the dean of the college, school, or division concerned on or before July 31 one-half of the fees will be cancelled. Notice to an instructor is not acceptable notice.

In no case will any part of the initial payment of tuition be refunded because of nonattendance upon classes.

Payments apply only to the session or term for which registration charges are incurred and in no case will these payments be credited to another session or term.

Any student in chemistry who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a laboratory check-out fee of \$2. A student dropping a course before the end of the session or term must check out of the laboratory at the next scheduled laboratory period.

No permission to withdraw and no certificate for work done will be given a student who has not a clear financial record.

UNIVERSITY REGULATIONS

Students in the Summer Sessions are subject to, and are expected to familiarize themselves with, the University regulations as stated in the general catalogue.

Academic Credit.—The Summer Sessions are an integral part of the University. Academic credit for completed work will be given toward the appropriate degrees in the various colleges and schools of the University in accordance with their separate regulations and requirements.

Residence.—Summer Sessions work may be counted in residence but the candidate for a degree must satisfy the residence requirements of the school or college concerned as stated in the general catalogue.

Amount of Work.—No full-time student may take more than nine credit hours of work during either session; no employed student, more than six hours. By carrying work in both sessions, a full-time student may earn as much as eighteen credit hours; an employed student, twelve hours.

The right is reserved to drop any student whenever, in the interest of the student or the University, the Faculty deems it advisable to do so.

The University is not responsible for the loss of personal property belonging to a student.

The University and its various colleges, schools, and divisions reserve the right to modify or change the requirements, rules, and fees of the University. Such regulations shall go into force whenever the proper authorities may determine and shall apply to every student of the University.

Detailed information concerning admission; scholarship requirements of the individual colleges, schools, and divisions; and requirements for degrees may be obtained from the general catalogue, which is available on request at the Office of the Director of Admissions.

STUDENT LIFE

SOCIAL AND RECREATIONAL PROGRAM OF THE UNIVERSITY

Provision is made for the social and recreational side of student life during the Summer Sessions. The Annual Summer Sessions Party opens the season and is followed by Friday Evening Starlight Dances on the Lisner Terrace. Teas are arranged so that new students will have a chance to become acquainted with their fellow students.

The city of Washington affords a variety of recreational opportunities. Wooded trails for hiking, riding, and picnicking wind through Rock Creek Park.

The National Symphony Orchestra presents a series of concerts at the Potomac Watergate nearby.

LIVING ACCOMMODATIONS

Women Students.—Women students under twenty-one years of age who are enrolled for six or more credit hours a session of academic work in the University must have their residences approved by the Director of Activities for Women before their registrations can be completed. In the Hattie M. Strong Residence Hall for Women, single

rooms are \$35 a month; double rooms are \$28 a month a person. Applications for rooms should be made well in advance. Meals are served at the Student Union. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women, in Columbian House.

Men Students.—Welling Hall provides double room facilities for 102 students. Rooms rent for \$24 a month a person. Single and double rooms are provided for 203 students in Draper and Bradley Halls. These are temporary dormitories and residence is restricted to veterans of World War II who are enrolled for a minimum of six credit hours of academic work in the University during a single session of the summer term. Single rooms are \$17 a month; double rooms are \$13 a month a person. The University maintains a limited number of temporary apartment units for married veteran students and their families, subject to the same requirements for tenancy as above. Meals are served at the Student Union. Application forms for room reservation may be obtained from the Director of Activities for Men, Building R, 2027 H Street NW.

Information concerning private rooming and boarding facilities near the University, for women students twenty-one years of age or older and for men students, may be obtained at the offices of the Director of Activities for Women and the Director of Activities for Men, respectively. The reservation of rooms in private houses must be made by students.

VETERANS EDUCATION

Veterans who wish advice concerning the educational program of the University or the procedure for securing the educational benefits of the GI Bill should consult the Veterans Office, Building Q.

AUTHORIZATION FROM THE VETERANS ADMINISTRATION

At least thirty days prior to registration the veteran should obtain from the Regional Office of the Veterans Administration, 1825 H Street NW., a Certificate of Entitlement or, if entitled to vocational rehabilitation, a letter approving training under Public Law 16 for presentation to the Veterans Office of the University at the time of registration. A photostatic copy of separation papers must accompany the application for certification. Veterans who have attended another institution under the GI Bill must obtain a Supplemental Certificate of Eligibility to present to this University.

Veterans already enrolled in the University are requested to consult the Office of Veterans Education prior to making any changes in their academic programs, because of changes in Veterans Administration regulations concerning Supplemental Certification.

ADMISSION

For veterans who are deficient in their regular requirements for admission, but who have been found by educational and psychological tests to be able to undertake college work, the University has made certain modifications in the entrance requirements.

Advanced Standing.—To receive credit for service schools, veterans should submit to the Director of Admissions photostatic copies of service records indicating courses successfully completed with sufficient identification of the course to enable the Admissions Office to locate it in the Guide to the Evaluation of Educational Experience in the Armed Forces.

CONTINUOUS REGISTRATION

By carrying a continuous program throughout the fall, winter, and summer terms, the veteran may complete a four-year college course in three calendar years with no interruption in his subsistence payments.

THE COLLEGES, SCHOOLS, AND DIVISIONS

THE COLLEGES, SCHOOLS, AND DIVISIONS

Information concerning specific requirements for degrees is omitted from this bulletin. For such information, the student is referred to the general catalogue.

THE JUNIOR COLLEGE

The Junior College includes the first two years of college work. Its curricula are intended to continue the studies of a general cultural nature begun in secondary school, and to lay a foundation for the more specialized work which is to follow.

The Junior College also provides the preprofessional work required for admission to the schools of Pharmacy, Education, and Government, and the first two years of the preprofessional work required for admission to the schools of Medicine and Law.

In addition it provides a two-year terminal curriculum in Secretarial Studies and a two-year terminal curriculum in Accounting for students who wish strictly vocational training in these subjects.

THE DEGREE OF ASSOCIATE IN ARTS

The Junior College offers work leading to the degree of Associate in Arts.

ENTRANCE REQUIREMENTS

An acceptable certificate of graduation from an accredited secondary school is required. The acceptability of the certificate depends upon the student's character and the quality of his work.

COLUMBIAN COLLEGE

Columbian College, the senior college of liberal arts and sciences, comprises the work of the junior and senior years and the Master of Arts and Master of Science disciplines.

THE DEGREES

Columbian College offers work leading to the following degrees: Bachelor of Arts, Bachelor of Science, Master of Arts, and Master of Science. In cooperation with the School of Medicine, Columbian College offers work leading to the combined degrees of Bachelor of Arts and Doctor of Medicine.

UNDERGRADUATE MAJORS

Curricula leading to the degree of Bachelor of Arts are available in the following major fields:

American Thought and Civilization	Mathematics
Art:	Philosophy
Appreciation	Physics
Drawing and Painting	Political Science
Biology	Psychology
Botany	Religion
Chemistry	Sociology
Economics	Spanish American Literature
English Literature	Spanish Literature
French Literature	Speech:
Geography	Public Speaking
Germanic Languages and Literatures	Theatre
History	Speech Correction
Journalism	Statistics
Latin American Civilization and Culture	Zoology

Curricula leading to the degree of Bachelor of Science are available in the following major fields:

Biology	Physics
Botany	Statistics
Chemistry	Zoology
Mathematics	

GRADUATE FIELDS

Graduate work leading to the degree of Master of Arts or Master of Science is offered in the following fields:

American Literary and Cultural	History
History	International Relations
Bacteriology	Latin American Civilization and Culture
Biochemistry	Mathematics
Biology	Philosophy
Botany	Physics
Chemistry	Physiology
Dramatic Art	Political Science
Economics	Psychology
English and American Literature	Spanish American Literature
English Literature	Spanish Literature
French Literature	Statistics
Geography	Zoology
Germanic Languages and Literatures	

In addition, programs can be arranged in combined fields subject to the approval of the division or divisions concerned.

ENTRANCE REQUIREMENTS

For the Bachelor's degrees, the degree of Associate in Arts based on the appropriate curriculum in the Junior College, or the equivalent, is

required. Scholarship requirements may be somewhat higher than those for graduation from the Junior College. For the Master's degrees, an approved Bachelor's degree from an accredited institution and a transcript of studies previously pursued, showing appropriate distribution of courses and a superior quality of work in the major field, are required.

THE GRADUATE COUNCIL

The Graduate Council offers work leading only to the degree of Doctor of Philosophy. Because the basis for work under the Graduate Council is primarily creative research, regular study in specific courses is considered quite incidental and is therefore not emphasized in connection with the curricula of the Summer Sessions. A student wishing to work under the disciplines of the Graduate Council will consult the Chairman of the Graduate Council for information concerning credentials and candidacy.

A pamphlet describing details of the Graduate Council program, together with a current list of fields of research offered by the Council, will be sent upon request to the Office of the Graduate Council.

THE LAW SCHOOL

The Law School offers work leading to the following degrees: Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

ENTRANCE REQUIREMENTS

For the Degree of Bachelor of Laws.—A Bachelor's degree awarded upon completion of a four-year course in an approved college or university is required. All pre-legal work must be of a satisfactory quality and distribution. No student will be admitted who has been in attendance at another law school and who, because of poor scholarship, is on probation or is ineligible to return to that school. From the applicants fulfilling the basic requirement of a college degree, a selection will be made by the Committee on Admissions.

The Juris Doctor degree is conferred as a recognition of completion with high rank of the full professional course, including experience in research and legal authorship. A student does not register as a candidate for this degree until his last year in the Law School.

For the Degree of Master of Laws.—A Bachelor's degree awarded upon completion of a four-year course in an approved college or university and the degree of Bachelor of Laws from an approved law school are required.

For the Degree of Master of Comparative Law.—The following are required: (1) the successful completion of and graduation from a course

in arts, philosophy, letters or sciences, equivalent to graduation from a gymnasium, lycee, or lyceo (junior college); and (2) graduation in law from a recognized foreign university where training was in civil law.

For the Degree of Doctor of Juridical Science.—The following are required: (1) the degree of Juris Doctor from this Law School; or (2) the degree of Bachelor of Arts from an approved college, the degree of Bachelor of Laws or the equivalent, earned with high rank, from an approved law school, outstanding capacity for scholarly work in the field of law, and acceptance as a candidate by the Committee on Graduate Studies of the Law School.

Unclassified Students.—A person eligible for admission to regular standing but not a candidate for a degree may, at the discretion of the Dean, be admitted as an unclassified student.

A person who is in good standing as a candidate for a degree in another approved law school may, at the discretion of the Dean, be admitted as an unclassified student. Work taken by an unclassified student will not be accepted for credit toward a degree at this Law School.

THE SCHOOL OF ENGINEERING

THE DEGREES

The School of Engineering offers work leading to the following degrees: Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering.

ENTRANCE REQUIREMENTS

An acceptable certificate of graduation from an accredited secondary school, or the satisfactory passing of College Entrance Board examinations in secondary school subjects selected with the approval of the Director of Admissions is required.

Nine and one-half of the fifteen units required for entrance must be distributed as follows: three in English, two in algebra, one in plane geometry, one-half in plane trigonometry, one in physics or chemistry, and two in one foreign language or history. A graduate of an approved high school who does not offer for admission the particular subjects required for the engineering curriculum, but who does present not less than fifteen acceptable units, may be admitted on condition, if such deficiency in the distribution of units does not exceed two units.

THE SCHOOL OF EDUCATION

The School of Education prepares teachers, supervisors, and administrators for educational service and offers opportunities to teachers of

experience to extend their education. The schedule of courses is arranged to meet the needs of employed students as well as those able to devote full time to their studies. It offers both graduate and undergraduate work.

THE DEGREES

The School of Education offers work leading to the following degrees: Bachelor of Arts in Education, Bachelor of Science in Home Economics, Bachelor of Science in Physical Education, Master of Arts in Education, and Doctor of Education.

ENTRANCE REQUIREMENTS

For the Bachelor's Degrees.—The satisfactory completion of two years of approved college work, or graduation from an approved two-year normal school, or the equivalent, is required.

For the Master's Degree.—A Bachelor's degree from an accredited college, or the equivalent, and the approval of the Committee on Admissions and Advanced Standing are required.

For the Doctor's Degree.—A Master's degree from an accredited college, or the equivalent, and the approval of the Faculty of the School of Education are required.

THE SCHOOL OF GOVERNMENT

THE DEGREES

The School of Government offers work leading to the following degrees: Bachelor of Arts in Government with a major in Foreign Affairs, Statistics, Accounting, and Business Administration; and Master of Arts in these fields as well as in Government and Economic Policy, Public Administration, Personnel Administration, and Vocational Counseling.

ENTRANCE REQUIREMENTS

For the Bachelor's Degree.—The satisfactory completion of two years of approved college work is required for admission to study for this degree.

For the Master's Degree.—An approved Bachelor's degree based on the proper training for the field selected by the student for graduate study is required.

FOREIGN SERVICE REVIEW COURSE

The University will again offer a twelve-week non-credit Review Course, June 19 to August 25, in preparation for the written Foreign Service Examination to be given by the Department of State on September 5-8, 1950. To be eligible to take this examination, the applicant

(1) shall be over 21 and under 30 years of age as of July 1, 1950; (2) shall have been a citizen of the United States for at least 10 years; (3) shall not be married to an alien; (4) shall have an adequate knowledge of at least one foreign language.

Enrollment in the Foreign Service Review Course is limited and admission is on a competitive basis. Applicants must have a Bachelor's degree in the field of the social sciences and a superior academic record. Only in exceptional cases is admission granted to college seniors and graduates in other fields.

Application for admission must be received by May 20, 1950.

The cost of this course, including library and medical facilities and other privileges of the University, is \$180, which is the case of veterans is covered by the educational benefits of the GI Bill.

For further information and application forms, write to the Director, Foreign Service Review Course, School of Government.

THE DIVISION OF UNIVERSITY STUDENTS

The Division of University Students makes the work of the University, in its several colleges and schools, accessible to students 21 years of age or over who are not working toward a degree in this University.

Candidates for degrees in other colleges and universities attending the Summer Sessions of the University are registered in the Division of University Students.

Adequate preparation to undertake the desired courses is required.

THE DIVISION OF SPECIAL STUDENTS

This is a non degree-granting division of the University in which the Director of Admissions may authorize the placement of students in the process of making up entrance deficiencies to degree-granting colleges and schools of the University.

Complete credentials must be submitted and evaluated before a program of studies is approved.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

EXPLANATION OF COURSE NUMBERS

An odd number preceding the name of the course indicates that the course is offered in the first session; an even number, that it is offered in the second session. The letter "x" following an odd number (e.g., 5x) indicates that the course, normally given in the first session, is given in the second session. The letter "x" following an even number (e.g., 6x) indicates that the course, normally given in the second session, is given in the first session. The letter "S" following the number of a course indicates that the course is given in one term of fifteen weeks.

First-group courses.—Courses numbered from 1 to 100, are planned for the student in the freshman or sophomore year. With the approval of the adviser and the dean, they may also be taken by a junior or senior. In certain instances, they may be taken by a graduate student to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

Second-group courses.—Courses numbered from 101 to 200, are planned for the student in the junior or senior year. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the officer of instruction, and when the completion of additional work has been certified by the officer of instruction.

Third-group courses.—Courses numbered from 201 to 300, are planned primarily for the graduate student. They are open, with the approval of the officer of instruction, to the qualified senior; they are not open to the Junior College student.

INDICATION OF THE AMOUNT OF CREDIT

The number of hours of credit given for the satisfactory completion of a course is in most cases indicated in parentheses after the name of the course.

The University reserves the right to change or withdraw any of the courses of instruction listed.

BIOLOGY *

FIRST SESSION

- 1 Survey in Biology (3)** Bowman
A review of the plant and animal kingdoms with emphasis upon the interdependence of living things. Material fee, \$4.50. Lecture—Tues. and Thurs., 9:10 A.M.; laboratory—Tues. and Thurs., 10:10 to 12:00 A.M.; field trip—Wed. and Fri., 9:10 to 12:00 A.M.
- 115 Cytology (3)** Bowman
Study of plant and animal cells and their components, including the chromosomes and their role in heredity, with training in the preparation of materials for study. Prerequisite: one year of college work in Biology, Botany, or Zoology. Material fee, \$6. Lecture—Mon. and Wed., 2:10 P.M.; laboratory—Mon. and Wed., 3:10 to 5:00 P.M. and Tues. and Thurs., 2:10 to 4:00 P.M.
- 127 Genetics (3)** Cook
A lecture course in which the general principles are illustrated with specific examples of inheritance in plants and animals, including man. Prerequisite: one year of college work in Biology, Botany, or Zoology. 6:10 P.M.
- 211 Research in Cytology** Bowman
Hours and credits to be arranged.
- 299 Thesis (3)** Bowman

SECOND SESSION

- 2 Survey in Biology (3)** Munson
A review of the fields of evolution and heredity, public health, and conservation of natural resources. Material fee, \$4.50. Lecture—Tues. and Thurs., 9:10 A.M.; laboratory—Tues. and Thurs., 10:10 to 12:00 A.M.; field trip—Wed. and Fri., 9:10 to 12:00 A.M.

BOTANY ‡

FIRST SESSION

- 1 Structure and Function of the Flowering Plant § (3)** Adams
The typical plant as a working mechanism, with the emphasis on the general biological significance of plant physiology. Material fee, \$4.50. Lecture—Tues. through Fri., 11:10 A.M.; laboratory—Tues. through Fri., 12:10 to 1:00 P.M.
- 107 Algae, Fungi, and Mosses (3)** Adams
Field and laboratory study of the habitat, structure, and identification of representative local forms of algae, fungi, and mosses. Prerequisite: Botany 1 and 2 or Biology 1-2. Lecture—Thurs., 6:10 P.M. and Sat., 9:10 A.M.; laboratory—Thurs. and Sat., as arranged; trip—Sat., 10:10 A.M. to 1:00 P.M.

* See also the departments of Botany and Zoology.

‡ See also the departments of Biology and Zoology.

§ Botany 1 and 2 are prerequisite to all other courses in Botany.

- 295 *Research* The Staff
Hours and credits to be arranged.
- 299 *Thesis* (3) The Staff

SECOND SESSION

- 2 *Survey of the Plant Kingdom** (3) Yocum
Study of the different kinds of plants with emphasis on the evolution of the plant kingdom; practice in identifying flowering plants. Material fee, \$4.50. Lecture—Tues. through Fri., 11:10 A.M.; laboratory—Tues. through Fri., 12:10 to 1:00 P.M.
- 138 *Growth Regulators* (3) Yocum
Lectures, literature reviews, and laboratory studies of the physiology of growth regulators and their functions in plants and animals. Prerequisite: Botany 1 and 2 or Biology 1-2. Lecture—Thurs., 6:10 to 8:00 P.M. and Sat., 9:10 to 11:00 A.M.; laboratory—Thurs. and Sat., as arranged.
- 296 *Research* The Staff
Hours and credits to be arranged.
- 300 *Thesis* (3) The Staff

BUSINESS ADMINISTRATION

FIRST SESSION

- 51 *Introductory Accounting* (3) Kennedy, Buckler
Basic principles underlying accounting records used by single proprietorships; preparation of the work sheet and financial statements. Section A: 8:10 A.M.; section B: 6:10 P.M.
- 102x *Business Management* (3) Steele
The management movement, organization of an enterprise, principles of management and their application to various departments of an enterprise. 6:10 P.M.
- 115 *Business Finance* (3) Steele
Survey of financial policies involved in new enterprises and study of capital structures, promotion, earnings, surplus, reorganization, and governmental regulation. Prerequisite: Business Administration 51-52. Mon., Tues., and Wed., 7:10 to 8:35 P.M.
- 132x *Business Budgeting* (3) Buckler
The preparation and utilization of budgets as an aid to management. Prerequisite: Business Administration 51-52. 8:10 A.M.
- 145 *Cost Accounting* (3) Bobys
Job order and process systems of cost findings, interrelations of the cost records and the general accounts, introduction to standard and distribution costs. Prerequisite: Business Administration 51-52. 11:10 A.M.

* Botany 1 and 2 are prerequisite to all other courses in Botany.

- 151 *Intermediate Accounting* (3) Bobys, Lewis
Problems relating to the recording of assets and liabilities; treatment of depreciation, depletion, amortization, funds, and reserves is stressed. Prerequisite: Business Administration 52. Section A: 9:10 A.M.; section B: 6:10 P.M.
- 153 *Advanced Accounting* (3) Lewis
Study of consolidated statements, statement of affairs, realization and liquidation reports, and estate and trust accounting. Prerequisite: Business Administration 151-52. Mon., Tues., and Wed., 7:10 to 8:35 P.M.
- 155 *Analysis of Financial Statements* (3) Kennedy
Technique of analyzing financial statements for the guidance of operating executives, directors, stockholders, and creditors; valuation of income statement and balance sheet items; determination and interpretation of ratios. Prerequisite: Business Administration 51-52. 10:10 A.M.
- 157 *Federal Taxation* (3) Stephens
Study of the accounting and reporting requirements of federal taxation, with emphasis upon income and social security taxes; business management problems presented by these taxes will also be considered. Prerequisite: Business Administration 51-52. 7:10 A.M.
- 169 *Advertising* (3) Johnson
Advertising as a function of marketing and merchandising; evaluation, purchase, criticism, and control of advertising; uses and limitations of advertising as a tool of management. 8:10 A.M.
- 171 *Principles of Marketing* (3) Johnson
A survey of marketing, giving particular attention to consumption retailing, wholesaling, and sales management; the entire marketing structure and its relation to the total economy. 7:10 A.M.
- 215 *Corporation Financial Problems* (3) Kennedy
Financial practice in promotion, consolidations and mergers, capital structure adjustments, and reorganization. Mon. and Tues., 6:10 to 8:30 P.M.
- 299 *Thesis* (3) The Staff

SECOND SESSION

- 51X *Introductory Accounting* (3) Kurtz
Basic principles underlying accounting records used by single proprietorships; preparation of the work sheet and financial statements. Mon., Tues., and Wed., 7:10 to 8:35 P.M.
- 52 *Introductory Accounting* (3) Jones, Buckler
Study of basic principles underlying accounting records used by partnerships and corporations; introduction to cost accounting and valuation and income determination problems. Prerequisite: Business Administration 51. Section A: 8:10 A.M.; section B: 6:10 P.M.

- 112 *Personnel Management in Industry* (3) _____
Survey of labor policies and methods of business enterprises. 7:10 A.M.
- 136 *Business Problems* (3) Jessup
Principles and methods of management illustrated by cases drawn from business and industry. 9:10 A.M.
- 152 *Intermediate Accounting* (3) Kurtz
Accounting for the organization, financing, operation, and dissolution of partnerships and corporations. Prerequisite: Business Administration 151. Section A: 9:10 A.M.; section B: 6:10 P.M.
- 165x *Auditing* (3) Jones
Duties and responsibilities of the auditor, principles and procedures in making audits, arrangement of working papers and the preparation of audit working papers and reports. Prerequisite: Business Administration 151-52 or permission of instructor. 7:10 P.M.
- 168 *Sales Management* (3) Jessup
Organization of the sales department, sales planning and forecasting, quotas, territories, performance standards, and analysis and control of distribution costs. Prerequisite: Business Administration 171. 8:10 A.M.
- 199x *Controllership* (3) Jessup
The duties, responsibilities, and place of the controller in a business organization; relations of controller to other departments and regulatory bodies; and the controller's relation to inventories, depreciation policies, internal auditing, expense control and budgeting, and financial reports to management, stockholders, and employees. Prerequisite: Business Administration 51-52. Mon., Tues., and Wed., 7:10 to 8:35 P.M.
- 291x *Seminar in Business Administration* (3) Kelso
Mon. and Tues., 6:10 to 8:30 P.M.
- 300 *Thesis* (3) The Staff

CHEMISTRY

FIRST SESSION

- †11 *General Chemistry* (4) Van Evera, Naeser,
Harkness, Perros
This course is the first half of a full course. The second half, Chemistry 12, must be completed before credit is allowed. Laboratory fee, \$12. Lecture—Tues. through Fri., 10:10 A.M. Laboratory—section K: Tues. through Fri., 8:10 to 10:00 A.M.; section M: Tues. through Fri., 1:10 to 3:00 P.M. Recitation—section K: Tues. and Thurs. 11:10 A.M.; section M: Tues. and Thurs., 3:10 P.M. A student registers for the lecture, and for laboratory and recitation sections of the same letter designation.

† A dagger preceding an odd-numbered course indicates that it is the first half of a full-year course, the second half of which must be completed before credit is allowed.

- 21 *Qualitative Inorganic Analysis* Vincent, Van Evera, Perros
(4)
Theoretical and practical study of methods of separating and identifying the more common cations and anions using semi-micro techniques. Prerequisite: Chemistry 12. Laboratory fee, \$12. Lecture—Tues. through Fri., 1:10 P.M. Laboratory—section K: Tues. through Fri., 9:10 to 12:00 A.M.; section M: Tues. through Fri., 2:10 to 5:00 P.M.
- 135 *Inorganic Chemistry: Preparations* (2) Naeser
Application of the technique of inorganic chemistry to the preparation and purification of a list of selected substances. Prerequisite: Chemistry 152. Prerequisite or concurrent registration, Chemistry 111-12. Laboratory fee, \$14. Morning and afternoon sections, hours to be arranged.
- 136x *Inorganic Chemistry: Preparations* (2) Naeser
Application of the technique of inorganic chemistry to the preparation and purification of compounds of the less common elements obtained from both minerals and commercial sources. Prerequisite: Chemistry 135. Laboratory fee, \$14. Morning and afternoon sections, hours to be arranged.
- †151 *Organic Chemistry* (4) Mackall
Chemistry of the carbon compounds. Semi-micro and macro techniques are employed in the laboratory. Prerequisite: Chemistry 12 and 21. This course is the first half of a full course. The second half, Chemistry 152, must be completed before credit is allowed. Lecture (3). Laboratory (1). Laboratory fee, \$6. Lecture—Mon., Wed., and Fri., 9:10 and 11:10 A.M. Laboratory—section K: Tues. and Thurs., 9:10 to 12:00 A.M.; section M: Tues. and Thurs., 2:10 to 5:00 P.M.
- 295 *Research* The Staff
Research on problems approved by the staff. Open to qualified students with advanced training. Laboratory fee, \$6 a credit hour. Hours and credits to be arranged.
- 299 *Thesis* (3) The Staff
Hours to be arranged. Laboratory fee, \$15.

SECOND SESSION

- 12 *General Chemistry* (4) Wood, Haight
Prerequisite: Chemistry 11. Laboratory fee, \$12. Lecture—Tues. through Fri., 10:10 A.M. Laboratory—section K: Tues. through Fri., 8:10 to 10:00 A.M.; section M: Tues. through Fri., 1:10 to 3:00 P.M. Recitation—section K: Tues. and Thurs., 11:10 A.M.; section M: Tues. and Thurs., 3:10 P.M. A student registers for the lecture, and for the laboratory and recitation sections of the same letter designation.
- 22 *Quantitative Inorganic Analysis* (4) Norton, Wood
The principles of gravimetric and volumetric analysis. Prerequisite: Chemistry 21 or the equivalent. Laboratory fee, \$15. Lecture—Tues. through Fri., 1:10 P.M. Laboratory—section K: Tues. through Fri., 9:10 to 12:00 A.M.; section M: Tues. through Fri., 2:10 to 5:00 P.M.

152 Organic Chemistry (4)

Wrenn, Sager

A continuation of Chemistry 151. Prerequisite: Chemistry 151. Lecture (2), laboratory (2). Laboratory fee, \$12. Lecture—Tues. through Fri., 1:10 P.M. Laboratory—section K: Tues. through Fri., 9:10 to 12:00 A.M.; section M: Tues. through Fri., 2:10 to 5:00 P.M.

155x Organic Chemistry: Preparations (2 or 3)

Wrenn

The synthesis of organic compounds and the application of the technique of organic chemistry to the preparation of pure compounds, using larger amounts and greater refinements than in Chemistry 151-52. Laboratory fee, \$8 a credit hour. Morning and afternoon sections, hours to be arranged.

296 Research

The Staff

Continuation of Chemistry 295. Laboratory fee, \$6 a credit hour. Hours and credits to be arranged.

300 Thesis (3)

The Staff

Hours to be arranged. Material fee, \$15.

CIVIL ENGINEERING**FIRST SESSION****21 Analytical Mechanics: Statics (2)**

Miklofsky

Composition and resolution of forces, axial stresses, centroids, friction. Prerequisite: Physics 6; prerequisite or concurrent registration: Mathematics 20. Tues. and Thurs., 6:10 to 8:00 P.M.

SECOND SESSION**22 Analytical Mechanics: Dynamics (3)**

Greenshields

Kinematics of a particle; kinetics of a body in translation, rotation, and plane motion; work and energy; impulse and momentum; simple vibrations. Prerequisite: Civil Engineering 21. Mon., Wed., and Fri., 6:10 to 8:00 P.M.

FIFTEEN-WEEK TERM**123S Strength of Materials (3)**

Miklofsky, Smith

Tension, compression, shear, flexure, and torsion; deflection; combined and working stresses. Prerequisite: Civil Engineering 22. Mon., Wed., and Fri., 6:10 P.M.

136S Hydraulics (3)

Miklofsky, Smith

Hydrostatics, flow through pipes and open channels, laminar and turbulent flow. Prerequisite: Civil Engineering 22. Mon., Wed., and Fri., 7:10 P.M.

ECONOMICS ***FIRST SESSION****1 Introductory Economics * (3)**

Burns, ———

Survey of the major economic institutions and economic problems in contemporary society. Section A: 9:10 A.M.; section B: 6:10 P.M.

* Economics 1-2 is prerequisite to all other courses in economics.

- 101 *Economic Theory* (3) Watson
Introduction to formal economic theory; advanced analysis of demand, supply, and price relations. 10:10 A.M.
- 102x *History of Economic Thought* (3) _____
Economic doctrines since the mercantilist writers; the history of the major schools of thought; influence of changing problems on theory. 6:10 P.M.
- 144x *Labor Movements* (3) _____
Survey of growth and types of labor unions, development and problems of collective bargaining. 7:10 P.M.
- 166x *Comparative Systems of Economic Reform* Watson
(3)
Critical analysis of the major theories of economic and social reform, with special attention to their origins and backgrounds. 11:10 A.M.
- 181 *International Economics* (3) _____
Survey of world economics; basic factors; resource controls; international trade; industrial, financial, and monetary processes and policies; relation to internal economic systems. 5:10 P.M.
- 205 *Business Cycle Theory* (3) Watson
The contributions of the pre-Keynesian writers. Mon. and Wed., 6:10 to 8:00 P.M.
- 225 *Economic Stabilization Policies* (3) Burns
Appraisal of economic policies directed towards the stabilization of the economy, with special attention to the problem of full employment. Tues. and Thurs., 6:10 to 8:00 P.M.

SECOND SESSION

- 2 *Introductory Economics* * (3) Miller, _____
Continuation of Economics I. Section A: 9:10 A.M.; section B: 6:10 P.M.
- 109x *Distribution Theory and Welfare Economics* (3) _____
Advanced economic theory with emphasis on income distribution and the literature on welfare economics. Prerequisite: Economics 101 or the equivalent. 7:10 P.M.
- 121x *Money and Banking* (3) Miller
Theory of money, credit, and banking; commercial banking and the Federal Reserve System; other financial institutions; international aspects of money; current financial problems. 10:10 A.M.
- 146 *Economic Security and Social Insurance* (3) Hanchett
Economic and social problems of unemployment and destitution, analysis of the federal social security program, survey of the Beveridge and other plans. 5:10 P.M.

* Economics 1-2 is prerequisite to all other courses in economics.

- 182 *International Economics* (3) Miller
Continuation of Economics 181. 11:10 A.M.
- 214 *Quantitative Economics* (3) Hanchett
Introduction to mathematical economic theories. Mon. and Wed., 6:10 to 8:00 P.M.
- 260 *Theory of Public Finance* (3) Hanchett
Survey of the literature on public finance, with special attention to controversial issues. Tues. and Thurs., 6:10 to 8:00 P.M.

EDUCATION

FIRST SESSION

- 109 *Learning and Teaching* (3) Wilson
For the general student as well as the prospective teacher. Nature of learning and teaching approached through the study of actual classroom situations. Mon. through Thurs., 9:10 A.M.; field work—four hours to be arranged.
- 121 *School and Society* (3) Jarman
For the general student as well as the prospective teacher. The local, national, and international roles of education; cooperation of the school with other community agencies. Mon. through Thurs.; field work—four hours to be arranged. Section A: 10:10 A.M.; section B: 6:10 P.M.

SECOND SESSION

- 110 *Learning and Teaching* (3) Ruffner
The principles and practices of good teaching. Mon. through Thurs., 9:10 A.M.; field work—four hours to be arranged.
- 122 *School and Society* (3) Hall
Organization and operation of schools; principles and functions. Mon. through Thurs.; field work—four hours to be arranged. Section A: 10:10 A.M.; section B: 6:10 P.M.

PRE-SESSION

June 12 to 30

- 219 *Elementary Education* (3) Robinson
Review of recent literature and practices; particular attention to *Education for All American Children*, the recent report of the Educational Policies Commission. 9:10 to 11:00 A.M.; conference hour—11:10 A.M.
- 233 *Audio-visual Education* (3) Johnson
Selection and use of audio-visual aids; management of materials and equipment. Material fee, \$5. Lecture—9:10 to 11:00 A.M.; laboratory—2:10 to 4:00 P.M.; conference hour—11:10 to 12:00 A.M.

- 255 *Secondary Education* (3) Root
Review of recent literature and practices; particular attention to *Education for All American Youth*, the recent report of the Educational Policies Commission, and *General Education in a Free Society*, the Harvard Committee. 9:10 to 11:00 A.M.; conference hour—11:10 A.M.

SPECIAL SIX-WEEK SESSION

July 3 to August 11

- 115 *Elementary School Classroom Procedures* Barnes, Winn (3)
Determination of children's needs and interests, providing for individual differences, evaluation of classroom practices. 8:00 to 9:00 A.M.; conference hour—Mon. and Wed., 10:20 A.M.
- 125 *Corrective Procedures in Reading* (3) Hilder
Study of levels, needs, materials, and corrective methods. Demonstrations and observations with clinic cases. 9:10 to 10:10 A.M.; conference hour—Tues. and Thurs., 10:20 A.M.
- 218 *Contemporary Problems in Education* (3) Jarman
A study of the forces that shape the policies and offerings of the school. 8:00 to 9:00 A.M.; conference hour—Tues. and Thurs., 10:10 A.M.
- 231 *Secondary School Classroom Procedures* (3) Bish
Survey of current classroom practices with particular attention to teaching aids, review of recent literature. 9:10 to 10:10 A.M.; conference hour—Mon. and Wed., 10:20 A.M.
- 254 *The Junior High School* (3) Root
Purposes, organization, core programs, guidance, developing courses of study. 2:10 to 3:10 P.M.; conference hour—Tues. and Thurs., 3:10 P.M.
- 256 *Secondary Education* (3) Bish
Current problems in each of the subject-matter fields. 11:30 A.M. to 12:30 P.M.; conference hour—Tues. and Thurs., 10:20 A.M.
- 272 *School Supervision* (3) Fox
Nature, organization, human relationships, and techniques. 10:20 to 11:20 A.M.; conference hour—Tues. and Thurs., 9:10 A.M.
- 279 *Adult Education* (3) Ruffner
Nature, extent, and organization of programs in adult education. Tues. and Thurs., 6:40 to 9:00 P.M.; conference hour—Tues. and Thurs., 6:00 P.M.
- 285 *Extra-classroom Activities* (3) Root
Home-room functions, student self-government, clubs, assemblies, school publications. Mon. and Wed., 6:40 to 9:00 P.M.; conference hour—Mon. and Wed., 6:00 P.M.

295 *Educational Research Methods and Procedures* (3) Fox
Required of all Master's candidates following Plan 2. 1:00 to 2:00 P.M.; conference hour—Mon. and Wed., 2:10 P.M.

297 *Reading in Education* (1) The Staff
To assist those preparing for the comprehensive examination. No credit toward degree requirements. 3:10 P.M.

Psychology 228 *Seminar: Techniques of Counseling* (3) Dreese
Specific types of vocational, educational, and personal counseling problems approached through the case method. Prerequisite: recent previous course in counseling and guidance and familiarity with individual analysis methods. 10:20 to 11:25 A.M.

299-300 *Thesis* (3-3) The Staff

POST-SESSION

August 14 to September 1

209 *Child Growth and Development* (3) Indorf
Basic factors in human growth and development and their relation to learning and teaching. Related practical experience in studying children with class analyses of procedures and results. 9:10 to 11:00 A.M.; conference hour—11:10 A.M.

211 *Evaluation in Education* (3) Ruffner
Nature, functions, and techniques; application to various types of evaluation problems. 10:10 to 12:00 A.M.; conference hour—2:00 P.M.

251 *Guidance in Secondary Schools* (3) Brougher
Scope; needs; organization of the program; services to students, the instructional staff, and the administration; personnel needed for the program. 9:10 to 11:00 A.M.; conference hour—11:10 A.M.

SPECIAL SESSION—ELEMENTARY EDUCATION

June 5 to September 1

For graduates of liberal arts colleges and graduates of secondary school curricula who wish to prepare for elementary school teaching.

107 *Introduction to Learning and Teaching* (2) Indorf
Child growth and development, nature of learning and teaching, principles of teaching. For liberal arts graduates who have had no equivalent professional training. 9:10 to 11:00 A.M.; conference hour—11:10 A.M.; field work to be arranged. June 5 to June 16.

108 *The Elementary School* (3)
Purposes, organization, program of studies, and general problems of the elementary school. For liberal arts graduates and graduates of secondary school curricula. 2:10 to 4:00 P.M.; conference hour—4:10 P.M.; field work to be arranged. June 19 to July 7.

III-12 *Elementary School Curriculum* (6)

An integrated course dealing with materials and methods; language skills—reading, writing, spelling, speaking, listening; natural and social sciences, arithmetic. May be taken for graduate credit. July 10 to August 4—2:10 to 3:00 P.M.; conference hour—3:10 P.M. August 7 to September 1—9:10 to 11:00 A.M.; conference hour—11:10 A.M.; field work to be arranged.

- 133-34 *Observation and Practice Teaching* (4) Indorf
In elementary schools. Hours to be arranged. June 26 to August 4.

ELECTRICAL ENGINEERING

FIRST SESSION

- 9 *Elements of Electrical Engineering* (3) Lee
Magnetic and electrical circuits; direct-current instruments and machines. Prerequisite: Physics 7; prerequisite or concurrent registration: Mathematics 20. 6:10 to 7:10 P.M.
- 13 *Electrical Laboratory* (2) The Staff
For the student not majoring in electrical engineering. Experiments in direct-current circuits, instruments, and machinery. Prerequisite: Electrical Engineering 10. Laboratory fee, \$6. Mon. and Thurs., 8:10 to 11:00 P.M.
- 105 *Direct-Current Laboratory* (2) The Staff
For the student majoring in electrical engineering. A course in measurements and direct-current dynamo laboratory. Prerequisite: Electrical Engineering 10. Laboratory fee, \$6. Mon. and Thurs., 8:10 to 11:00 P.M.
- 133 *Alternating-Current Laboratory* (2) The Staff
A continuation of Electrical Engineering 105-6, with experiments on Alternating-current circuits, instruments, and machines. Prerequisite: Electrical Engineering 106 and 108. Laboratory fee, \$6. Mon. and Thurs., 8:10 to 11:00 P.M.

SECOND SESSION

- 10 *Elements of Electrical Engineering* (3) Ames
Alternating-current circuits, instruments, and machines. Prerequisite: Electrical Engineering 9. 6:10 to 7:10 P.M.
- 14 *Electrical Laboratory* (2) The Staff
A continuation of Electrical Engineering 13 with experiments in alternating-current circuits, instruments, and machinery. Laboratory fee, \$6. Mon. and Thurs., 8:10 to 11:00 P.M.
- 106 *Direct-Current Laboratory* (2) The Staff
Continuation of Electrical Engineering 105. Laboratory fee, \$6. Mon. and Thurs., 8:10 to 11:00 P.M.
- 134 *Alternating-Current Laboratory* (2) The Staff
Continuation of Electrical Engineering 133. Laboratory fee, \$6. Mon. and Thurs., 8:10 to 11:00 P.M.

ENGLISH *

FIRST SESSION

ENGLISH COMPOSITION

A English Practice (3) The Staff
Instruction, drill, and exercises in grammar, vocabulary, spelling, and mechanics in general; instruction and exercises in composition and reading. This course is designed to prepare students for English 1. Section A: 9:10 A.M.; section B: 10:10 A.M.; section C: 7:10 P.M.

1 Freshman English * (3) The Staff
Review of grammar, exercises in composition, readings. Section A: 8:10 A.M.; section B: 9:10 A.M.; section C: 10:10 A.M.; section D: 7:10 P.M.

2x Freshman English (3) The Staff
Continuation of English 1. Section A: 8:10 A.M.; section B: 9:10 A.M.; section C: 10:10 A.M.; section D: 6:10 P.M.

9 Sophomore Composition (3) Nichols
A study of types of expository writing with weekly exercises. Prerequisite: English 1-2. 9:10 A.M.

ENGLISH LITERATURE ‡

51 Introduction to English Literature (3) Mowry, Stone
A historical survey. Section A: 8:10 A.M.; section B: 6:10 P.M.

91 Introduction to European Literature (3) Shepard
Consideration of various types. 9:10 A.M.

126x The Appreciation of Literature (3) Stone
The study of the principles of criticism and their application to various literary types. 5:10 P.M.

162x Victorian Literature (3) Shepard
Poetry and prose from 1830 to 1900. 10:10 A.M.

182x The English Novel from Dickens to Woolf (3) Shepard
11:10 A.M.

222x The Age of Chaucer (3) Stone
8:10 P.M.

AMERICAN LITERATURE ‡

71 Introduction to American Literature (3) Coberly
A historical survey. From the beginnings to the Civil War. 10:10 A.M.

* Students registered in English 1 are tested in the minimum essentials of standard usage, vocabulary, writing skill, and reading speed and comprehension. Those students who showed marked superiority may, upon passing of further tests, be exempted from one or both terms of the Freshman English course; those who show deficiencies will be assigned to English A.

‡ English 1-2 is prerequisite to all other courses in English.

§ English 51-52, 71-72, or 91-92 is prerequisite to all second group courses except English 125 and 126.

- 173 *Major American Poets* (3) Coberly
Advanced critical study of significant writers and movements from beginnings through nineteenth century. 9:10 A.M.
- 177 *The American Novel* (3) Coberly
Historical and critical study of significant novels and short stories from the beginnings through nineteenth century. 11:10 A.M.

SECOND SESSION

ENGLISH COMPOSITION

- A *English Practice* (3) The Staff
Instruction, drill, and exercises in grammar, vocabulary, spelling, and mechanics in general; instruction and exercises in composition and reading. This course is designed to prepare students for English 1. 6:10 P.M.
- B *English for Foreign Students* (3) Allee
A course in reading and writing designed to prepare the student for English 1. Special attention is given to spelling, syntax, grammar, idiom, and vocabulary. 6:10 P.M.
- 1X *Freshman English** (3) The Staff
Review of grammar, exercises in composition, readings. Section A: 11:10 A.M.; section B: 6:10 P.M.
- 2 *Freshman English* (3) The Staff
Continuation of English 1. Section A: 8:10 A.M.; section B: 9:10 A.M.; section C: 10:10 A.M.; section D: 7:10 P.M.
- 9X *Sophomore Composition* (3) Howard
A study of types of expository writing with weekly exercises. 10:10 A.M.
- 10 *The Short Story* (3) Howard
Some study of the technique of the short story and class criticism of student writing. 9:10 A.M.

ENGLISH LITERATURE†

- 52 *Introduction to English Literature* (3) Linton, Day
A historical survey. Section A: 8:10 A.M.; section B: 6:10 P.M.
- 92 *Introduction to European Literature* (3) Venezky
Consideration of various types. 9:10 A.M.

* Students registered in English 1 are tested in the minimum essentials of standard usage, vocabulary, writing skill, and reading speed and comprehension. Those students who showed marked superiority may, upon passing of further tests, be exempted from one or both terms of the Freshman English course; those who show deficiencies will be assigned to English A.

† English 1-2 is prerequisite to all other courses in English.
‡ English 51-52, 71-72, or 91-92 is prerequisite to all second group courses except English 102 and 126.

- 122 *English Literature from the Beginnings to 1500* (3) Allee
Chaucer. 7:10 P.M.
- 125x *The Evolution of Modern Speech* (3) Allee
The development of the English language in a historical treatment of English grammar. 5:10 P.M.
- 140 *Milton* (3) Linton
9:10 A.M.
- 165x *The Twentieth Century* (3) Linton
British poetry, prose, and drama since 1900. 10:10 A.M.
- 252 *Studies in the Romantic Movement* (3) Day
8:10 P.M.

AMERICAN LITERATURE*

- 72 *Introduction to American Literature* (3) Bolwell
A historical survey. From the Civil War to the present day. 10:10 A.M.
- 176 *American Drama* (3) Bolwell
Historical and critical study of significant plays and forms. The twentieth century. 11:10 A.M.

GEOGRAPHY

FIRST SESSION

- 51 *Introduction to Geography* (3) Campbell
A study of geography as human ecology; an analysis of the physical and cultural environments, and the relationships that exist between these environments and man. 9:10 A.M.
- 163 *World Climates* (3) Abrahamson
Climatic classifications; the distribution and geographic significance of world climates. 6:10 P.M.
- 231 *Seminar in Geography: the Geography of Recreation* (3) Campbell
Application of geographic elements and methods to the analysis of an economic and social adaptation. Mon. and Wed., 7:10 to 9:00 P.M.
- 251 *Seminar: Problem Areas—Asia* (3) Trueblood
A study of the underlying geographic factors contributing to social, economic, and political maladjustment in certain "problem areas" of Asia. Tues. and Thurs., 7:10 to 9:00 P.M.
- 299 *Thesis* (3) The Staff

* English 51-52, 71-72, or 91-92 is prerequisite to all second group courses except English 125 and 126.

SECOND SESSION

52 *Introduction to Earth Sciences* (3) Jewell

An introduction to the sciences dealing with the physical earth: the lithosphere, the hydrosphere, and the atmosphere—with special emphasis upon those elements which most directly affect man's adjustment to his physical environment. 9:10 A.M.

215x *Seminar: Geographic Factors in American Foreign Policy* (3) Koenig

Tues. and Thurs., 10:10 to 12:00 A.M.

232 *Seminar in Geography: the Geography of the Oceans* (3) Jewell

Physical and cultural aspects of the oceans and their coasts. Rudimentary physical oceanography and marine ecology. Influence of the oceans on economic and political development of adjacent areas. Mon. and Wed., 7:10 to 9:10 P.M.

300 *Thesis* (3) The Staff

GERMANIC LANGUAGES AND LITERATURES

FIRST SESSION

†1 *First-year German* (3) Rogers, Sehrt

The essentials of German grammar, translation of easy prose. Section A: 9:10 A.M.; section B: 6:10 P.M.

2x *First-year German* (3) Rogers

Continuation of German 1. 10:10 A.M.

†3 *Second-year German* (3) Rogers, Sehrt

Selections from modern German prose, review of grammar. Prerequisite: German 1-2 or two years of high school German. Section A: 11:10 A.M.; section B: 7:10 P.M.

4x *Second-year German* (3) Cokenias

Continuation of German 3. 8:10 A.M.

SECOND SESSION

2 *First-year German* (3) Legner, Cokenias

The essentials of German grammar, translation of easy prose. Section A: 9:10 A.M.; section B: 6:10 P.M.

†3x *Second-year German* (3) Legner

Selections from modern German prose, review of grammar. Prerequisite: German 1-2 or two years of high school German. 10:10 A.M.

4 *Second-year German* (3) Legner, Cokenias

Continuation of German 3. Section A: 11:10 A.M.; section B: 7:10 P.M.

† A dagger preceding an odd-numbered course indicates that it is the first half of a full-year course, the second half of which must be completed before credit is allowed.

HISTORY *

FIRST SESSION

- 39 *The Development of European Civilization to 1648* (3) Kayser
Primarily for freshmen. The political, social, economic, and cultural history of the Old World from ancient times through the Reformation period. 7:00 A.M.
- 40x *The Development of European Civilization Since 1648* (3) Davison
A continuation of History 39 from the Reformation Period to the present. 6:10 P.M.
- 130x *Nationalism* (3) Kayser
The historical evolution of modern nationalism. 8:00 A.M.
- 150x *European Diplomatic History* (3) Davison
Background of the European state system and of diplomatic practices and relations since 1871, with emphasis on the policies and actions of the great powers and their statesmen. 5:10 P.M.
- 181 *Diplomatic History of the United States* (3) Merriman
Tendencies toward isolation, expansion, and collectivism; disputes with foreign countries and their settlement; and the activities of the American secretaries of state and diplomatic agents: to the Civil War. 9:10 A.M.
- 182x *Diplomatic History of the United States* (3) Merriman
A continuation of History 181 from the Civil War to the present. 10:10 A.M.
- 199 *Proseminar: the Literature and Method of History* (3) The Staff
Limited to majors in history. Hours to be arranged.
- 249 *Seminar in European Diplomatic History* (3) Davison
Tues. and Thurs., 8:00 to 10:00 P.M.
- 281 *Seminar in the Diplomatic History of the United States* (3) Merriman
Tues. and Thurs., 1:00 to 3:00 P.M.
- 291 *Seminar* (3) The Staff
Hours to be arranged.
- 299 *Thesis* (3) The Staff
For candidates for the Master's degree in history. Hours to be arranged.

* History 39-40 is prerequisite to courses 109 through 152; History 71-72, to courses 161 through 186.

SECOND SESSION

- 71x *The Development of the Civilization of the United States* (3) Koenig
Primarily for sophomores. The political, social, economic, and cultural forces of the United States in their world setting from 1492 to 1865. 7:00 A.M.
- 72 *The Development of the Civilization of the United States* (3) Koenig
A continuation of History 71x from 1865 to the present. 8:00 A.M.
- 161x *Latin American Civilization* (3) Wilgus
Development of political, economic, social, and institutional affairs of the Ibero-American colonies. 5:10 P.M.
- 162 *Latin American Civilization* (3) Wilgus
A continuation of History 161x. 6:10 P.M.
- 173x *Representative Americans* (3) Gray
A biographical approach to national history. Some fifty significant and pivotal personalities in the development of the United States in government, business, education, science, religion, journalism, the arts, and social reform. 9:10 A.M.
- 174 *Economic History of the United States* (3) Gray
Main trends in the development of American agriculture, industry, and trade since 1607, with emphasis on tendencies and problems since the Civil War. 10:10 A.M.
- 200 *Proseminar: the Literature and Method of History* (3) The Staff
Hours to be arranged.
- 262 *Seminar in Latin American History* (3) Wilgus
Tues. and Thurs., 8:00 to 10:00 P.M.
- 272 *Seminar in the Social History of the United States* (3) Gray
Tues. and Thurs., 1:00 to 3:00 P.M.
- 292 *Seminar* (3) The Staff
Hours to be arranged.
- 300 *Thesis* (3) The Staff
Hours to be arranged.

LAW

FIRST SESSION

- 112x *Contracts* (4) Burke
Promissory obligation: offer and acceptance, consideration, statute of frauds, formal instruments, rights of third parties, assignments, joint obligations, conditions, performance, discharge. Mon. and Tues. 12:10 to 1:00 P.M.; Wed., Thurs., and Fri., 11:10 A.M. to 1:00 P.M.

129 Legal Method and Legal System (4) Benson

Introduction to study of substantive and procedural law. Examination of basic concepts with training in method and technique of case law, based upon modern records in state and federal cases and individual practice in the use of law books and legal writing. Importance of language in law and legal reasoning, both apart from and in connection with statutory interpretation and as affected by the use of precedents, under the doctrines of stare decisis, law of the case, and res judicata. Background on development of the English and American legal systems; organization of the judiciary and the bar, stressing enforcement of ethical standards. Mon., Tues., and Wed., 9:10 to 11 A.M.; Thurs. and Fri., 9:10 to 10:00 A.M.

133 Property I (4)

Concepts of property, possession, and ownership; legal relations with respect to chattels and documentary intangibles created by gift, sale, pledge, lien, bailment, etc. Mon. through Thurs., 5:50 to 7:40 P.M.

138x Property II (4)

Real property; introduction; estates, seisin, landlord and tenant; future interests at common law and under the statutes of uses and wills; merger, elementary study of remoteness and powers; adverse possession; prescription; natural rights. Mon. through Thurs., 5:50 to 7:40 P.M.

231 Equity (4)

Specific performance of contracts; equitable conversion; statute of frauds; mutuality; conditions; defenses; equitable servitudes; powers of an equity court; effect of decrees, interpleader, bills of peace, cloud on title, rescission and reformation, mistake. Section A: Mon. and Tues., 9:10 to 10:00 A.M.; Wed., Thurs., and Fri., 9:10 to 11:00 A.M.; section B: Mon. through Thurs., 5:50 to 7:40 P.M.

246x Negotiable Instruments (4)

Bills of exchange, promissory notes and checks, especially under the Negotiable Instruments Law. Mon., Tues., and Wed., 11:10 A.M. to 1:00 P.M.; Thurs. and Fri., 12:10 to 1:00 P.M.

248x Property III (2)

Conveyances, rents, easements, profits, licenses, covenants running with the land, and recording. Mon., Tues., Thurs., and Fri., 10:10 to 11:00 A.M.

254x Wills (2)

Formation and revocation of wills; testate and intestate succession. Mon., Tues., Thurs., and Fri., 9:10 to 10:00 A.M.

315 Conflict of Laws (4)

Study of cases involving foreign elements; principles of jurisdiction and limitations upon its exercise; procedure, torts, workmen's compensation, contracts, property, family law, administration of estates, business associations. Section A: Mon. and Tues., 9:10 to 10:00 A.M.; Wed., Thurs., and Fri., 9:10 to 11:00 A.M.; section B: Mon. through Thurs., 5:50 to 7:40 P.M.

317 *Creditors' Rights* (4)

Remedies of unsecured creditors: judgments, fraudulent conveyances, creditors' agreements, equity and statutory receiverships, and bankruptcy. The general approach is that of law administration. Mon., Tues., and Wed., 11:10 A.M. to 1:00 P.M.; Thurs. and Fri., 12:10 to 1:00 P.M.

381 *Trusts* (4)

Reiblich

Creation, elements, administration, enforcement, termination. Liabilities to and of third persons. Resulting and constructive trusts. Mon. through Thurs., 5:50 to 7:40 P.M.

SECOND SESSION

112 *Contracts* (4)

Weaver

Promissory obligation: offer and acceptance, consideration, statute of frauds, formal instruments, rights of third parties, assignments, joint obligations, conditions, performance, discharge. Mon. through Thurs., 5:50 to 7:40 P.M.

123X *Criminal Law and Procedure* (4)

Cooper

Elements of criminal liability; specific crimes; combinations of persons in crime; criminal procedure. Mon. and Tues., 12:10 to 1:00 P.M.; Wed., Thurs., and Fri., 11:10 A.M. to 1:00 P.M.

133X *Property I* (4)

Borroughs

Concepts of property, possession, and ownership; legal relations with respect to chattels and documentary intangibles created by gift, sale, pledge, lien, bailment, etc. Mon., Tues., and Wed., 9:10 to 11:00 A.M.; Thurs. and Fri., 9:10 to 10:00 A.M.

214 *Constitutional Law* (4)

Farage, Collier

Historical introduction; judicial approach and methods; doctrine of the separation of powers; powers of the National Government; the federal system; relation of the state courts and the federal courts. Section A: Mon., Tues., and Wed., 11:10 A.M. to 1:00 P.M.; Thurs. and Fri., 12:10 to 1:00 P.M.; section B: Mon. through Thurs., 5:50 to 7:40 P.M.

234 *Evidence* (4)

Fryer

Functions of court and jury; witnesses; hearsay, opinion, and circumstantial evidence; proof of authenticity and contents of writings. Mon. and Tues., 9:10 to 10:00 A.M.; Wed., Thurs., and Fri., 9:10 to 11:00 A.M.

311X *Corporations* (4)

Davison

Legal requirements as to contributions of capital; powers and rights of corporations, corporate officials, and shareholders. Mon. and Tues., 9:10 to 10:00 A.M.; Wed., Thurs., and Fri., 9:10 to 11:00 A.M.

333X *Legislation* (4)

Justiciable aspects of the legislative process; forms and types of statutes; principles of statutory interpretation, structure, and drafting. Mon., Tues., and Wed., 11:10 A.M. to 1:00 P.M.; Thurs. and Fri., 12:10 to 1:00 P.M.

362 *Security Transactions* (4)

Security interests in real and personal property, their creation, transfer, enforcement, and extinguishment, together with security problems in the fields of suretyship and bankruptcy. Mon. through Thurs., 5:50 to 7:40 P.M.

SIXTEEN-WEEK TERM

June 6th to September 26th

102S *Agency* (2)

Problems of agency in the conduct of business. Fri., 5:50 to 7:40 P.M.

256S *Sales* (2)

Common law, Uniform Sales Act and related statutes. Intention to transfer of property interest (specific, unascertained, and future goods); specification and appropriation; cash and conditional sales; C.O.D., F.O.B., and C.I.F. shipments; negotiable bills of lading and warehouse receipts; trust receipts; fraud on seller, retention of possession, and bulk sales; remedies of seller and buyer, including suit for price, stoppage in transit, seller's warranties; inspection. Fri., 5:50 to 7:40 P.M.

447S *Municipal Corporations* (2)

McIntire

Municipal corporations: organization, powers, functions, and legal relations of local governmental units. Fri., 5:50 to 7:40 P.M.

MATHEMATICS

FIRST SESSION

Algebra (without college credit)

11:10 A.M.

Plane Geometry (without college credit)

10:10 A.M.

3 *College Algebra* (3)

The Staff

Prerequisite: one year each of high school algebra and high school geometry. Section A: 9:10 A.M.; section B: 7:10 P.M.

6x *Plane Trigonometry* (3)

The Staff

Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3. Section A: 11:10 A.M.; section B: 6:10 P.M.

12x *Analytic Geometry* (3)

The Staff

Prerequisite: Mathematics 6, or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry. Section A: 11:10 A.M.; section B: 7:10 P.M.

19 *Differential Calculus* (3)

Johnston,

Prerequisite: Mathematics 12. Section A: 9:10 A.M.; section B: 7:10 P.M.

- 20X *Integral Calculus* (3) Nelson, _____
Prerequisite: Mathematics 19. Section A: 10:10 A.M.; section B: 6:10 P.M.
- 112X *Mathematics for Engineers and Scientists* (3) Nelson
Prerequisite: Mathematics 132. 9:10 A.M.
- 125 *Advanced Algebra* (3) Johnston
Prerequisite: Mathematics 20. 10:10 A.M.
- 132X *Differential Equations* (3) _____
Prerequisite: Mathematics 20. 6:10 P.M.

SECOND SESSION

- 3X *College Algebra* (3) The Staff
Prerequisite: one year each of high school algebra and high school geometry. Section A: 9:10 A.M.; section B: 6:10 P.M.
- 6 *Plane Trigonometry* (3) The Staff
Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3. Section A: 10:10 A.M.; section B: 7:10 P.M.
- 12 *Analytic Geometry* (3) The Staff
Prerequisite: Mathematics 6, or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry. Section A: 11:10 A.M.; section B: 6:10 P.M.
- 19X *Differential Calculus* (3) Mears, _____
Prerequisite: Mathematics 12. Section A: 11:10 A.M.; section B: 7:10 P.M.
- 20 *Integral Calculus* (3) Taylor, Williams
Prerequisite: Mathematics 19. Section A: 9:10 A.M.; section B: 7:10 P.M.
- 123X *Theory of Equations* (3) _____
Prerequisite: Mathematics 20. 6:10 P.M.
- 132 *Differential Equations* (3) Mears
Prerequisite: Mathematics 20. 10:10 A.M.

MECHANICAL ENGINEERING

FIRST SESSION

- 111 *Thermodynamics* (3) Kabelac
With introductory study of laws of heat transmission. Prerequisite: Physics 8. Prerequisite or concurrent registration: Mathematics 20. Mon., Tues., Thurs., and Fri., 8:45 to 10:00 A.M.

SECOND SESSION

112 *Thermodynamics* (3)

Cruickshanks

Continuation of Mechanical Engineering 111. Prerequisite: Mechanical Engineering 111. Mon., Tues., Thurs., and Fri., 8:45 to 10:00 A.M.

PHILOSOPHY

FIRST SESSION

51 *Introduction to Philosophy* (3)

Gauss

A critical introduction to the problems of modern philosophy in relation to scientific and social developments since the Renaissance. 10:10 A.M.

111 *History of Philosophy* (3)

Gauss

A history of philosophy in the western world from 600 B.C. to the Middle Ages. 9:10 A.M.

121 *Logic and Scientific Method* (3)

Gauss

An introduction to the study of formal logic. 6:10 P.M.

SECOND SESSION

52 *Introduction to Philosophy* (3)

Rose

Continuation of Philosophy 51. Introduction to issues in the philosophy of science and social philosophy. 10:10 A.M.

112 *History of Philosophy* (3)

Rose

From the Middle Ages to Kant. 9:10 A.M.

122 *Logic and Scientific Method* (3)

Rose

Continuation of Philosophy 121. Theories of induction, probability, and scientific method. 6:10 P.M.

PHYSICS

FIRST SESSION

7 *General Physics* (3)

Meijer, Christman

Elementary electricity and magnetism. Prerequisite: Physics 5*; high school algebra and plane geometry. Material fee, \$6.

Section	Lecture	Recitation	Laboratory
A ...TTh	11:10 am...MW	3:10 pm...TTh	2:10 - 4:30 pm
B ...TTh	11:10 am...MW	11:10 am...MW	2:10 - 4:30 pm
C ...TTh	6:10 pm...MW	7:10 pm...MW	8:10 -10:30 pm
D ...TTh	6:10 pm...MW	6:10 pm...TTh	8:10 -10:30 pm

8x *General Physics* (3)

Meijer

Foundations of Modern Physics. The experimental evidence concerning light waves and quanta, X-rays, and radiowaves; electrons, protons, and other elementary particles; atomic and molecular structure; and nuclear physics. Prerequisite: Physics 6 and 7.

* This prerequisite may be waived for students who have credit for a high school physics course which included individual laboratory work, providing they pass the qualifying examination given at the dates specified in the University calendar.

- 239x *Seminar: Personnel Administration* (3) Torpey
Tues. and Thurs., 8:10 P.M.
- 272 *Problems in International Politics and Organization* (3) Hadsel
Mon. and Wed., 8:10 P.M.

PSYCHOLOGY

FIRST SESSION

- 1 *General Psychology* * (3) Tuthill, Fox
The fundamental principles underlying human behavior. Section A: 8:10 A.M.; section B: Mon., Wed., and Fri., 7:10 to 8:30 P.M.
- 22x *Applied Psychology* (3) Caldwell
The applications of psychology in business, industry, medicine, law, guidance, education, and social problems. 10:10 A.M.
- 22x *Introduction to Educational Psychology* (3) Faith
Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training. 9:10 A.M.
- 117 *Physiological Psychology* (3) Fox
Structure, function, and phylogeny of receptors, nervous system, and effectors as mediators of behavior, including drives, learning, and emotions. Mon., Wed., and Fri., 5:40 to 7:00 P.M.
- 151 *Social Psychology* (3) Tuthill
The social foundations of attitudes and behavior. Individual adjustment to group situations, such as the family, school, fraternity, and occupation. The psychological bases of race prejudice, nationalism, and war. 9:10 A.M.
- 193 *Readings in Psychology* (3) The Staff
Supervised readings on specific topics in psychology, with conferences for undergraduate majors. Open only to seniors with 18 or more credits in psychology with a quality point index of 3.00 or higher. Special permission of staff member under whom course is to be taken is necessary. Time to be arranged.
- 196x *History and Systems of Psychology* (3) Caldwell
A survey of the contemporary schools of psychology. Prerequisite: 12 credits in psychology. Mon., Wed., and Fri., 11:10 A.M. to 12:30 P.M.
- 205 *Field Work in Psychology* (3) The Staff
Supervised field work in agencies providing psychological service. Admission by permission of the Executive Officer of the Department. Hours to be arranged.

* Psychology 1 is prerequisite to all other courses in psychology.

- 207 *Readings in Psychology for Graduate Students* (3) The Staff
Supervised readings with conferences on specified topics in psychology. Hours to be arranged.
- 223 *Seminar: Psychology of Learning* (3) Fox
Contemporary theories of learning with a consideration of the systematic concepts and experiments which result from the various theories. Tues. and Thurs., 3:10 to 5:00 P.M.
- 227 *Seminar: Counseling and Guidance* (3) Davis
Recent developments and current problems in vocational, educational, and personal guidance in various types of agencies with particular reference to education. Prerequisite: educational or psychological measurements. Tues. and Thurs., 7:10 to 9:00 P.M.
- 251 *Seminar: Advanced Social Psychology* (3) Tuthill
Current research and theory in social psychology; group dynamics, ego-involvements, action research, and social interaction theory. Mon. and Wed., 1:10 to 3:00 P.M.
- 271x *Seminar: Theories of Personality* (3) Caldwell
A survey of the various theories of personality, with emphasis upon theoretical problems and methodology in the field of personality study. Tues. and Thurs., 1:10 to 3:00 P.M.
- 295 *Research in Psychology* The Staff
Hours and credits to be arranged.
- 299 *Thesis* (3) The Staff

SPECIAL SIX-WEEK SESSION

- 228 *Seminar: Techniques of Counseling* (3) Dreese
Specific types of vocational, educational, and personal counseling problems approached through the case method. Prerequisite: recent previous course in counseling and guidance and familiarity with individual analysis methods. 10:20 to 11:25 A.M.

SECOND SESSION *

- 1x *General Psychology** (3) Hunt, Phillips
The fundamental principles underlying human behavior. Section A: 8:10 A.M.; section B: Mon., Wed., and Fri., 7:10 to 8:30 P.M.
- 2 *Applied Psychology* (3) Mosé
The applications of psychology in business, industry, medicine, law, guidance, education, and social problems. Mon., Wed., and Fri., 11:10 A.M. to 12:30 P.M.
- 29x *Child Psychology* (3) Phillips
A genetic approach to the study of the child. Mon., Wed., and Fri., 5:40 to 7:00 P.M.
- 98 *Abnormal Psychology* (3) Hunt
The causes, diagnosis, treatment, and prevention of the various types of maladjustments and mental disorders. 9:10 A.M.

* Psychology 1 is prerequisite to all other courses in psychology.

SECOND SESSION

French *

- 2 *First-year French* (3) The Staff
Continuation of French 1. Section A: 11:10 A.M.; section B: 6:10 P.M.
- †3x *Second-year French* (3) The Staff
Reading of modern French, grammar review, oral practice. Pre-requisite: French 1-2 or two years of high school French. Section A: 10:10 A.M.; section B: 6:10 P.M.
- 4 *Second-year French* (3) The Staff
Continuation of French 3. Section A: 8:10 A.M.; section B: 7:10 P.M.
- 110 *French Conversation and Composition* (3) The Staff
Section A: 8:10 A.M.; section B: 6:10 P.M.
- 135x *The Modern Novel in France* (3) Keating
Reading, analysis, and discussion of typical plays and dramatic trends of the nineteenth and twentieth centuries. Lectures, collateral readings, class discussion. 9:10 A.M.

Spanish *

- 2 *First-year Spanish* (3) The Staff
Continuation of Spanish 1. Section A: 8:10 A.M.; section B: 6:10 P.M.
- †3x *Second-year Spanish* (3) The Staff
Reading of modern Spanish, grammar review, oral practice. Pre-requisite: Spanish 1-2 or two years of high school Spanish. Section A: 9:10 A.M.; section B: 7:10 P.M.
- 4 *Second-year Spanish* (3) The Staff
Continuation of Spanish 3. Section A: 10:10 A.M.; section B: 11:10 A.M.; section C: 6:10 P.M.
- 110 *Spanish Conversation and Composition* (3) Supervia
Section A: 8:10 A.M.; section B: 7:10 P.M.
- 136 *The Modern Drama in Spain* (3) Supervia
A study of selected plays with an appreciation of their social and literary significance. Lectures, collateral reading, class discussion. 10:10 A.M.

SOCIOLOGY ‡

FIRST SESSION

- 1 *Introductory Sociology* ‡ (3) Lavell
The origin and development of culture, man's social nature, types of groups and social institutions, social processes, social change, and social control. Section A: 9:10 A.M.; section B: 6:10 P.M.

* A standardized placement examination will be required of all entering students who wish to continue in college the language begun in high school. Upon completion of the examination, assignment will be made to the appropriate course, with credit to be assigned on the usual basis.

† A dagger preceding an old-numbered course indicates that it is the first half of a full-year course, the second half of which must be completed before credit is allowed.

‡ Sociology 1 is prerequisite to all other courses in sociology.

- 127 **Community Organization (3)** Geisert
The study of social interaction in American communities, factors making for disorganization, community leadership, methods of organizing social forces to meet community needs. 11:10 A.M.

- 133 **The Family (3)** Geisert
A study of the primitive and modern family, changing functions and roles of the family and its members, factors promoting disorganization, family crises, family reorganization. 10:10 A.M.

SECOND SESSION

- 2 **Introductory Sociology (3)** Yeager
The factors producing social change and social disorganization, an analysis of the problems arising from the disorganization of the individual and the family. Section A: 9:10 A.M.; section B: 6:10 P.M.

- 132 **Marriage (3)** Yeager
The reasons for marriage, marriage laws, mate selection, courtship, husband-wife relations, factors in marital adjustment, marriage prediction and counseling. 10:10 A.M.

SPEECH

FIRST SESSION

- A **Speech Clinic** Bielski and Staff
Individual or group lessons, without academic credit, for such speech difficulties as lisping, cleft palate, articulatory problems, and stuttering. Fee: for individual lesson, \$5; for group lesson, \$3. Time to be arranged.

- B **American Speech for Foreign Students** Bielski and Staff
Individual or group instruction, without academic credit, in the formation of the sounds of spoken English, with emphasis on rhythm and inflection. The International Phonetic Alphabet is used. Fee: for individual lesson, \$5; for group lesson, \$3. Time to be arranged.

- 11 **Training the Speaking Voice (3)** Bielski and Staff
Developing ease, naturalness, and clarity in the speaking voice. Analysis of individual voices through recordings. Phonetic approach to the study of the sounds of English and the standards of speech. Recording fee, \$1.50. Section A: 10:10 A.M.; section B: 11:10 A.M.; section C: 8:10 P.M.

- 12x **Oral Reading (3)** Leggette
Reading to others, theory and practice of interpreting the printed page. Prerequisite: Speech 11. Recording fee, \$1.50. 10:10 A.M.

- 21 **Effective Speaking (3)** Leggette, Mangum
Preparation and delivery of extempore speeches; developing confidence and poise, body and voice control; selecting and organizing material. Recording fee, \$1.50. Section A: 8:10 A.M.; section B: 9:10 A.M.; section C: 10:10 A.M.; section D: 7:10 P.M.

ZOOLOGY

FIRST SESSION

- 1 Introduction to Zoology (4)** Mortensen and Staff
An introduction to the study of the structure, functions, and relation of animals, and of the fundamental biological principles involved. Material fee, \$4.50. Lecture—section A: Mon. through Thurs., 1:10 P.M.; section B: Mon. through Thurs., 6:10 P.M. Laboratory—section S: Mon. through Thurs., 2:10 to 4:00 P.M.; section T: Mon. through Thurs., 7:10 to 9:00 P.M.

- 142x Comparative Vertebrate Anatomy (3)** Hansen
Lectures on the organ systems of the vertebrates; laboratory dissection of the cat. Prerequisite: Zoology 2. Material fee, \$6. Lecture—Mon. and Wed., 2:10 P.M.; laboratory—Mon. through Thurs., 3:10 to 5:00 P.M.

- 144x Introduction to Vertebrate Embryology (3)** Hansen
The origin and early development of the individual and the formation of organ systems. Emphasis is placed on the frog, chick, and pig, with reference to the human embryo. Prerequisite: Zoology 2 and 141 or 142. Material fee, \$6. Lecture—Mon. and Wed., 6:10 P.M.; laboratory—Mon. through Thurs., 7:10 to 9:00 P.M.

- 295 Research (3)** The Staff
Investigation of special problems. Hours to be arranged.

- 299 Thesis (3)** The Staff

SECOND SESSION

- 2 Introduction to Zoology (4)** Young and Staff
Continuation of Zoology 1. Material fee, \$4.50. Lecture—section A: Mon. through Thurs., 1:10 P.M.; section B: Mon. through Thurs., 6:10 P.M. Laboratory—section S: Mon. through Thurs., 2:10 to 4:00 P.M.; section T: Mon. through Thurs., 7:10 to 9:00 P.M.

- 105x Entomology (3)** Munson
A study of the elementary morphology, physiology, and ecology of insects, with an introduction to the taxonomy of the more important groups. Prerequisite: Zoology 1, or the equivalent. Material fee, \$6. Lecture—Mon. and Wed., 2:10 P.M.; laboratory—Mon. through Thurs., 3:10 to 5:00 P.M.

- 137x Histology (3)** Young
An introduction to the microscopical anatomy of normal tissues and organs. Prerequisite: Zoology 2. Material fee, \$6. Lecture—Mon. and Wed., 7:10 P.M.; laboratory—Mon. and Wed., 8:10 to 10:00 P.M. and Tues. and Thurs., 7:10 to 9:00 P.M.

- 296 Research (3)** The Staff
Investigation of special problems. Hours to be arranged.

- 300 Thesis (3)** The Staff

SCHEDULE OF CLASSES

HOURLY SCHEDULE OF CLASSES •
FIRST SESSION 4—JUNE 6 to JULY 31

MORNING CLASSES

7:10	8:10	9:10	10:10	11:10
Bus Adm 157 Bus Adm 171 Hist 39 (at 7)	Bus Adm 51A Bus Adm 132x Bus Adm 169 Chem 11K lab. (TWThF to 10) Eng 1A Eng 2xA Eng 51A Fr 3A Fr 4xA Fr 109A Ger 4x Hist 130x (at 8) ME 111 (MTThF 8:45-10) Psych 1A Span 1A Span 109A Speech 21A	Biol 1 lect. (TTh) Biol 1 trip (WF to 12) Bot 107 lect. (S) Bus Adm 151A Chem 21K lab. (TWThF to 12) Chem 151 lect. (MWF) Chem 151K lab. (TTh to 12) Econ 1A Ed 109 (MTWTh) Eng A—sect. A (Comp.) Eng 1B (Comp.) Eng 2xB (Comp.) Eng 9 (Comp.) Eng 91 (Eng. Lit.) Eng 173 (Am. Lit.) Fr 136x Geog 51 Ger 1A Hist 181 Math 3A Math 19A	Biol 1 lab. (TTh to 12) Bot 107 trip (S to 1) Bus Adm 155 Chem 11 lect. (TWThF) Econ 101 Ed 121A Eng A—sect. B (MTWTh) Eng 1C (Comp.) Eng 2xC (Comp.) Eng 71 (Am. Lit.) Eng 162x (Eng. Lit.) Fr 22A Ger 2x Hist 182x Math—Plane Geometry Math 20xA Math 125	Bot 1 lect. (TWThF) Bus Adm 145 Chem 11K rec. (TTh) Chem 151 lect. (MWF) Econ 166x Eng 177 (Am. Lit.) Eng 182x (Eng. Lit.) Fr 1A Ger 1A Math—Algebra Math 62A Math 12xA Phys 7A lect. (TTh) Phys 7B lect. (TTh) Phys 7B rec. (MW) Pol Sc 10x Pol Sc 112x Pol Sc 181 Psych 196x (MWF to 12:30) Relig 59A Soc 127 Span 3B

• Seminars and research courses for which hours are to be arranged, courses in the Law School, the special sessions of the School of Education, and the fifteen-week term will be found under departmental announcements.

Students otherwise indicated.

FIRST SESSION—Morning Classes (Continued)

7:10	8:10	9:10	10:10	11:10
		Math 112x Phil 111 Phys 55C lect. (S) Pol Sc 118x Psych 22x Psych 151 Relig 10x Soc 1A Span 22A Span 42A Speech 21B Speech 22x Stat 52xA	Phil 51 Phys 55C lab. (S to 12:30) Pol Sc 9A Pol Sc 171 Psych 2x Soc 133 Span 3A Span 135 Speech 11A Speech 12x Speech 21C Stat 51A lect.	Speech 11B

FIRST SESSION—AFTERNOON CLASSES

12:10	1:10	2:10	3:10
Bot 1 lab. (TWThF 10 1)	Chem 11M lab. (TWThF to 3) Chem 21 lect. (TWThF) Hist 281 (TTh 1-3) Phys 8xA lect. (MWTF) Phys 8xA rec. (TTh) Psych 251 (MW to 3) Psych 272x (TTh to 3) Zoo 1A lect. (MTWTh)	Biol 115 lect. (MW) Biol 115 lab. (TTh to 4) Chem 21M lab. (TWThF to 5) Chem 151M lab. (TTh to 5) Phys 7A lab. (TTh to 4:30) Phys 7B lab. (MW to 4:30) Phys 55A lect. (TTh) Phys 55B lect. (WF) Stat 51M lab. (MW 2-3:30) Stat 51N lab. (TTh 2-3:30) Zoo 1S lab. (MTWTh to 4) Zoo 142x lect. (MW)	Biol 115 lab. (MW to 5) Chem 11M rec. (TTh) Phys 7A rec. (MW) Phys 55A lab. (TTh to 5:30) Phys 55B lab. (WF to 5:30) Psych 223 (TTh to 5) Zoo 142x lab. (MTWTh to 5)

FIRST SESSION—EVENING CLASSES

5:10	6:10	7:10	8:10
Econ 181 Eng 126x (Eng. lit.) Hist 150x Psych 117 (MW 5:40-7)	Biol 127 Bot 107 lect. (Th) Bus Adm 51B Bus Adm 102x Bus Adm 151B Bus Adm 215 (MT to 8:30) CE 21 (TTh to 8) Econ 1B Econ 102x Econ 205 (MW to 8) Econ 225 (TTh to 8)	Bus Adm 115 (MTW to 8:35) Bus Adm 153 (MTW to 8:35) Econ 144x Eng A—sect. C (Comp.) Eng 1D (Comp.) Fr 3B Fr 4xB Geog 231 (MW to 9) Geog 251 (TTh to 9) Ger 3B Math 3B	EE 13 (MTTh to 11) EE 105 (MTTh to 11) EE 133 (MTTh to 11) Eng 222x (Eng. lit.) Hist 249 (TTh 8-10) Phys 7C lab. (MW to 10:30) Phys 7D lab. (TTh to 10:30) Phys 55C lab. (W to 10:30)

Evening Classes (Continued)

The Summer Sessions

71

5:10	6:10	7:10	8:10
<p>Ed 121B (MTWTh) EE 9 (to 7:10) Eng 2xD (Comp.) Eng 51B (Eng. lit) Fr 1B Fr 2xB Fr 109B Geog 163 Ger 1B Hist 40x Math 6xB Math 20xB Math 132x Phil 121 Phys 7C lect. (TTh) Phys 7D lect. (TTh) Phys 7D rec. (MW) Phys 191 Pol Sc 151 Relig 59B Soc 1B Span 1B Span 3C Speech 101 Stat 51B lect. Stat 117 Zoo 1B lect. (MTWTh) Zoo 144x lect. (MW)</p>	<p>Ed 121B (MTWTh) EE 9 (to 7:10) Eng 2xD (Comp.) Eng 51B (Eng. lit) Fr 1B Fr 2xB Fr 109B Geog 163 Ger 1B Hist 40x Math 6xB Math 20xB Math 132x Phil 121 Phys 7C lect. (TTh) Phys 7D lect. (TTh) Phys 7D rec. (MW) Phys 191 Pol Sc 151 Relig 59B Soc 1B Span 1B Span 3C Speech 101 Stat 51B lect. Stat 117 Zoo 1B lect. (MTWTh) Zoo 144x lect. (MW)</p>	<p>Math 12xB Math 19B Phys 7C rec. (MW) Phys 8xB lect. (MWF) Phys 8xB rec. (TTh) Phys 55C lect. (W) Pol Sc 9B Psych 1B (MWF to 8:30) Psych 227 (TTh to 9) Span 2xB Span 4xB Span 109B Speech 21D Stat 52xB Stat 115 lect. Zoo 1T lab. (MTWTh to 9) Zoo 144x lab. (MTWTh to 9)</p>	<p>Pol Sc 213 (TTh) Pol Sc 281 (MW) Speech 11C Stat 51P lab. (MW 8-9:30) Stat 115 lab. (TTh 8-9:30)</p>

SECOND SESSION—AUGUST 2 to SEPTEMBER 22

MORNING CLASSES

7:10	8:10	9:10	10:10	11:10
Bus Adm 112 Hist 71x (at 7) Phys 6A lab. (MW 7:30-10) Pol Sc 172	Bus Adm 52A Bus Adm 168 Chem 12K lab. (TWThF to 10) Eng 2A (Comp.) Eng 52A (Eng. lit.) Fr 4A Fr 110A Hist 72 (at 8) ME 112 (MTThF 8:45-10) Pol Sc 9x Psych 1xA Span 2A Span 110A	Biol 2 lect. (TTh) Biol 2 trip (WF to 12) Bot 138 lect. (S to 11) Bus Adm 136 Bus Adm 152A Chem 22K lab. (TWThF to 12) Chem 152K lab. (TWThF to 12) Econ 2A Ed 110 (MTWTh) Eng 2B (Comp.) Eng 10 (Comp.) Eng 92 (Eng. lit.) Eng 140 (Eng. lit.) Fr 135x Geog 52 Ger 2A Hist 173x Math 3xA Math 20A Phil 112 Pol Sc 182 Psych 98 Soc 2A	Biol 2 lab. (TTh to 12) Chem 12 lect. (TWThF) Econ 121x Ed 122A (MTWTh) Eng 2C (Comp.) Eng 9x (Comp.) Eng 72 (Am. lit.) Eng 165x (Eng. lit.) Fr 3xA Geog 215x (TTh to 12) Ger 3x Hist 174 Math 6A Math 132 Phil 52 Pol Sc 10A Pol Sc 128 Soc 132 Span 4A Span 136 Speech 12A Speech 21xB Stat 52A	Bot 2 lect. (TWThF) Chem 12K rec. (TTh) Econ 182 Eng 1xA (Comp.) Eng 176 (Am. lit.) Fr 2A Ger 4A Math 12A Math 19xA Phys 6A lect. (TTh) Phys 6A rec. (MW) Phys 6B lect. (TTh) Phys 6B rec. (MW) Pol Sc 129x Psych 2 (MWF to 12:30) Span 4B Speech 11xA Speech 12B

SECOND SESSION—MORNING CLASSES (Continued)

7:10	8:10	9:10	10:10	11:10
		Span 3xA Speech 21xA Speech 22 Stat 51xA lect.		

SECOND SESSION—AFTERNOON CLASSES

12:10	1:10	2:10	3:10
Bot 2 lab. (TWThF to 1)	Chem 12M lab. (TWThF to 3) Chem 22 lect. (TWThF) Chem 152 lect. (TWThF) Hist 272 (TTh 1-3) Phys 5xA lect. (MW) Phys 5xA rec. (TTh) Phys 5xB lect. (MW) Psych 225x (MW to 3) Zoo 2A lect. (MTWTh)	Chem 22M lab. (TWThF to 5) Chem 152M lab. (TWThF to 5) Phys 5xA lab. (MW to 4:30) Phys 5xB rec. (TTh) Phys 6B lab. (MW to 4:30) Stat 51xM lab. (MW 2-3:30) Zoo 2S lab. (MTWTh to 4) Zoo 105x lect. (MW)	Chem 12M rec. (TTh) Phys 5xB lab. (TTh to 5:30) Psych 144 (MWF to 4:30) Zoo 105x lab. (MTWTh to 5)

SECOND SESSION—EVENING CLASSES

5:10	6:10	7:10	8:10
Econ 146 Eng 125x (Eng. lit.) Hist 161x Psych 29x (MWF 5:40-7)	Bot 138 lect. (Th to 8) Bus Adm 52B Bus Adm 152B Bus Adm 291x (MT to 8:30) CE 22 (MWF to 8) Econ 2B Econ 214 (MW to 8) Econ 260 (TTh to 8) Ed 122B (MTWTh) EE 10 (to 7:10) Eng A (Comp.) Eng B (Comp.) Eng 12B (Comp.) Eng 52B (Eng. lit.) Fr 2B Fr 3xB Fr 110B Ger 2B Hist 162 Math 3xB Math 12B Math 123x Phil 122 Phys 6C lect. (TTh) Phys 6D lect. (TTh) Phys 6D rec. (MW) Phys 106 Pol Sc 127x Pol Sc 125 (TTh)	Bus Adm 51x (MTW to 8:35) Bus Adm 165x Bus Adm 199x (MTW to 8:35) Econ 100x Eng 2D (Comp.) Eng 122 (Eng. lit.) Fr 4B Geog 232 (MW to 9:10) Ger 4B Math 6B Math 19xB Math 20B Phys 6C rec. (MW) Pol Sc 10B Psych 12B (MWF to 8:30) Psych 131x (MWF to 8:30) Psych 248 (TTh to 9) Span 3xB Span 110B Speech 21xC Stat 51xB lect. Stat 116 lect. Zoo 2T lab. (MTWTh to 9) Zoo 137x lect. (MW) Zoo 137x lab. (TTh to 9)	EE 14 (MTh to 11) EE 106 (MTh to 11) EE 134 (MTh to 11) Eng 252 (Eng. lit.) Hist 262 (TTh 8-10) Phys 6C lab. (MW to 10:30) Phys 6D lab. (TTh to 10:30) Pol Sc 239x (TTh) Pol Sc 272 (MW) Stat 51xN lab. (MW 8-9:30) Stat 116 lab. (TTh 8-9:30) Zoo 137x lab. (MW to 10)

SECOND SESSION—EVENING CLASSES (Continued)

5:10	6:10	7:10	8:10
	Soc 2B Span 2B Span 4C Speech 11xB Stat 52B Stat 118 Zoo 2B lect. (MTWTh)		

INDEX

- Academic Credit, 19-20
- Administration, officers of, 4-5
- Admission, 16-17, 25, 26-27, 27-28, 28, 29
- Associate in Arts, degree of, 25
- Bachelor of Arts, degree of, 26-27
- Bachelor of Science, degree of, 25, 26
- Biology, courses in, 34
- Botany, courses in, 34-35
- Business Administration, courses in, 35-37
- Calendar of the Summer Sessions, vi
- Chemistry, courses in, 37-39
- Civil Engineering, courses in, 39
- Columbian College, 25-27
- Combined curricula, Bachelor of Arts—Doctor of Medicine, 25
- Courses of instruction, 31-66
- Credit:
 - Indication of in course descriptions, 33
 - Maximum for Summer Sessions, 20
- Deans and Directors, 4-5
- Doctor of Education, degree of, 29
- Doctor of Philosophy, degree of, 27
- Economics, courses in, 39-41
- Education:
 - Courses in, 41-44
 - School of, 28-29
- Electrical Engineering, courses in, 44
- Engineering:
 - Courses in, 39, 44, 54-55
 - School of, 28
- English, courses in, 45-47
- Faculty of the Summer Sessions, 11-15
- Fees and financial regulations, 17-19
- Foreign Service Review Course, 29-30
- French, courses in, 61, 62
- Geography, courses in, 47-48
- German, courses in, 48
- Government, School of, 29-30
- Graduate Council, 27
- History, courses in, 49-50
- Hospital services, 18
- Junior College, 25
- Law:
 - Courses in, 50-53
 - School of, 27-28
- Library facilities, 8
- Living accommodations and costs, 20-21
- Master of Arts, degree of, 25, 26
- Master of Science, degree of, 25, 26
- Mathematics, courses in, 53-54
- Mechanical Engineering, courses in, 54-55
- Medical services, 18
- Officers of Administration, 4-5
- Philosophy, courses in, 55
- Physics, courses in, 55-56
- Political Science, courses in, 56-58
- Psychology, courses in, 58-60
- Refund of tuition, 19
- Registration, 17
- Regulations, 19-20
- Religion, courses in, 60
- Romance Languages, courses in, 61-62
- Schedule of classes, hourly, 67-75
- Sociology, courses in, 62-63
- Spanish, courses in, 60, 62
- Special Students, Division of, 30
- Speech, courses in, 63-64
- Staff of Instruction, 11-15
- Statistics, courses in, 64-65
- Student life, 20-21
- Trustees, Board of, 3
- University Students, Division of, 30
- University history, organization, academic status, location, educational facilities, 6-8
- Veterans Education, 21-22
- Withdrawal from the University, 19
- Zoology, courses in, 66

THE LAW SCHOOL

1950-51

THE HISTORY OF THE
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CONTENTS

	PAGE
CALENDAR OF THE LAW SCHOOL.....	vi
THE UNIVERSITY	1
The Board of Trustees.....	3
Officers of Administration.....	4
History and Organization, Academic Status, Location.....	5
THE LAW SCHOOL.....	7
The Faculty and Staff of Instruction.....	9
General Information	15
Admission	18
Registration	20
Fees and Financial Regulations.....	20
Scholarships, Prizes, Loan Funds.....	22
Regulations	23
Student Life	25
The Degrees	27
COURSES OF INSTRUCTION.....	31
DEGREES CONFERRED, 1949-50.....	40
STUDENTS REGISTERED, 1949-50.....	48
SUMMARIES OF REGISTRATION, 1949-50.....	81
INDEX	87

CALENDAR

1950-51

Date	Day	Occasion
1950		
Fall Term:		
Sept. 27-29.....	Wednesday through Friday	Registration
Oct. 2.....	Monday	Fall term begins
Nov. 11.....	Saturday	Fall Convocation. Holiday
Nov. 23-25.....	Thursday through Saturday	Thanksgiving recess
Dec. 22-Jan. 2....	Friday through Tuesday	Christmas recess
1951		
Jan. 3.....	Wednesday	Classes resume Last day for applications for degrees to be conferred in February
Jan. 5.....	Friday	Last day for receiving dissertations of candidates for the degree of Doctor of Juridical Science to be conferred following May
Jan. 19-30	Friday through Tuesday	Fall term examination period
Winter Term:		
Feb. 1 and 2.....	Thursday and Friday	Registration
Feb. 5.....	Monday	Winter term begins
Feb. 22.....	Thursday	Winter Convocation. Holiday
March 23 and 24..	Friday and Saturday	Easter recess
April 13.....	Friday	Last day for applications for degrees to be conferred in May
May 16-26.....	Wednesday through Saturday	Winter term examination period
May 27.....	Sunday	Baccalaureate Sermon
May 30.....	Wednesday	Commencement
Summer Term:		
June 4.....	Monday	Registration of new students the first session
June 5.....	Tuesday	First-session classes begin
July 4.....	Wednesday	Independence Day. Holiday
July 31.....	Tuesday	First summer session ends
Aug. 1.....	Wednesday	Registration for the second session of the summer term
Aug. 6.....	Monday	Second-session classes begin
Sept. 3.....	Monday	Last day for applications for degrees to be conferred in September
Sept. 25.....	Tuesday	Labor Day. Holiday
Sept. 26-28.....	Wednesday through Friday	Second summer session ends
		Registration for the fall term the academic year 1951-52

THE UNIVERSITY

THE BOARD OF TRUSTEES

The Board of Trustees of the University is composed of the President and Vice-President of the University ex officio and the following persons by election:

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 Frank Atherton Howard, B.S. in M.E., LL.B.
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 Lloyd Bennett Wilson

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THE UNIVERSITY

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Ulysses S. Grant, 3d, B.S., *Graduate United States Engineers School*
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Harold Griffith Sutton, M.S., *Director of Admissions*
Fred Everett Nessell, A.B., *Registrar; Secretary of the Faculties*
John Russell Mason, B.S. in L.S., A.M., *Librarian; Curator of Art*
Myrna Pauline Sedgwick, A.B., *Administrative Secretary*
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Virginia Randolph Kirkbride, A.M., *Director of Activities for Women*
Alan Thomas Deibert, A.M., *Adviser to Students from Foreign Countries*
Mitchell Dreese, Ph.D., *Dean of the Summer Sessions*
Daniel LeRay Borden, A.M., M.D., *Director of Health Administration*
Lester Allan Smith, A.M., *Director of Alumni Relations*
John Rust Busick, A.B., *Director of Public Relations*
Don Carlos Faith, A.M., *Director of Veterans Education*
Benjamin Douglass Van Evera, Ph.D., *Coordinator of Scientific Activities*
Burnice Herman Jarman, A.M., Ed.D., *Special Assistant to the President*

THE LAW SCHOOL

Oswald Symister Colclough, B.S., LL.B., LL.D., *Dean of the Law School*
_____, *Assistant Dean of the Law School*
Louis Harkey Mayo, B.S., LL.B., *Secretary of the Law School*
Anna Marie Bischoff, A.B., *Recording Secretary in the Law School*
Ella Cooper Thomas, LL.B., *Assistant Librarian in Charge of the Law Library*
Bonnie Laird Marsh, A.B., *Secretary to the Dean of the Law School*
Kaethe Wiegand Wilber, *Secretary in the Law School*

THE UNIVERSITY

HISTORY AND ORGANIZATION

The idea of a university in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

The George Washington University operates under a charter granted by an act of Congress of February 9, 1821, to Columbian College in the District of Columbia. In 1873 the name was changed to "Columbian University" and in 1904 to "The George Washington University".

The University as it is now organized consists of the Junior College, comprising the work of the freshman and sophomore years; Columbian College, the senior college of liberal arts, which offers work leading to the Bachelor's and Master's degrees; the Graduate Council, which offers work leading to the degree of Doctor of Philosophy; the professional schools, which include Medicine, Law, Engineering, Pharmacy, Education, and Government; the Division of University Students; the Division of Special Students; and the Summer Sessions.

ACADEMIC STATUS

The George Washington University is on the final approved list of the Association of American Universities. This fact not only assures to students the academic standards of this association, but also is important to those who desire to transfer credits from one institution to another.

The University is also accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools, and is on the approved list of the American Association of University Women.

The Law School is a charter member of the Association of American Law Schools and is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association.

LOCATION

The George Washington University is in downtown Washington, four blocks west of the White House and east of the Potomac River with its extensive parkway. Within a few blocks are the buildings housing the offices of many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor. Also readily accessible are the Capitol, the Library of Congress, the National Archives, the Supreme Court, and other federal courts.

THE LAW SCHOOL

THE LAW SCHOOL

THE FACULTY AND STAFF OF INSTRUCTION *

CLOYD HECK MARVIN, Ph.D., LL.D., *President of the University*
OSWALD SYMISTER COLCLOUGH, B.S., LL.B., LL.D., *Dean of the Law School*

LOUIS HARKEY MAYO, B.S., LL.B., *Assistant Dean of the Law School*
Secretary of the Law School

EMERITUS FACULTY

WALTER COLLINS CLEPHANE
Professor Emeritus of Law

LL.B. 1889, LL.M. 1890, LL.D. 1932, The George Washington University. Member 1890- , Committee on Admissions and Grievances, District Court of the United States for the District of Columbia; Member 1906- , Conference of Commissioners on Uniform State Laws. In Practice of Law 1889- . Member of Clephane, Latimer and Hall, Washington (D. C.), 1918-48; Instructor in Moot Court 1899-1900, Professor of Law 1900-36, Professor Emeritus of Law 1936- . The George Washington University.

GILBERT LEWIS HALL
Professor Emeritus of Law

A.B. 1890, Swarthmore College; LL.B. 1918, The George Washington University. Teacher and Division Superintendent of Schools 1901-10, P. I. with U. S. Indian Service 1912-18; in Practice of Law with Clephane and Latimer, Washington (D. C.) 1918-36; Member 1936-48, Clephane, Latimer and Hall, Washington (D. C.); Lecturer in Law 1920-38, Adjunct Professor of Law 1938-42, Professor Emeritus of Law 1942- . The George Washington University.

JOHN WILMER LATIMER
Professor Emeritus of Law

LL.B. 1897, The George Washington University. In Practice of Law 1906-13; Judge 1913-17, Juvenile Court of the District of Columbia; Member 1918-48, Clephane, Latimer and Hall, Washington (D. C.); Clerk of the Moot Court 1904-7, Instructor in Law 1908-9, Assistant Professor of Law 1910-13, Professor of Law 1913-42, Professor Emeritus of Law 1942- . The George Washington University.

WALTER LEWIS MOLL
Professor Emeritus of Law

A.B. 1898, Concordia College (Ind.); Graduate 1899, Concordia Theological Seminary (St. Louis); LL.B. 1923, Indiana University; S.J.D. 1924, Harvard University. University Scholar 1902-3, University Fellow 1903-4, Johns Hopkins University; Professor of English 1904-9, Professor of Greek 1909-20, Concordia College (Ind.); in Practice of Law with Olds & Thomas, Fort Wayne (Ind.) 1920-22; Instructor in Commercial Law 1920-21, Instructor in Law 1921-23, Indiana University; Professor of Law 1924-43; Professor Emeritus of Law 1943- . The George Washington University.

HECTOR GALLOWAY SPALDING
Professor Emeritus of Law

B.S. 1900, University of Minnesota; LL.B. 1903, S.J.D. 1924, Harvard University. Acting Assistant Professor of Law 1914-15, Stanford University; in Practice of Law with Ritch, Woodford, Bovee and Butcher, New York City; with Cassoday, Butler, Lamb and Foster, Chicago; Assistant Professor of Law 1920-22, Professor of Law 1922-47, Professor Emeritus of Law in Residence 1947-49, Professor Emeritus of Law 1949- . The George Washington University.

* The President of the University, the Dean and the Assistant Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, and Assistant Professors constitute the Faculty.

WENDELL PHILLIPS STAFFORD*Professor Emeritus of Law*

LL.B. 1883, Boston University; A.M. 1901, Dartmouth College; LL.D. 1905, Litt.D. 1920, University of Vermont; LL.D. 1906, Georgetown University; Litt.D. 1910, Middlebury College; Litt.D. 1916, The George Washington University. Judge 1900-1904, Supreme Court of Vermont; Associate Justice 1904-31, Supreme Court of the District of Columbia; Lecturer on Agency 1904-6, Georgetown University; Professor of Law 1908-29, Professor Emeritus of Law 1929-, The George Washington University.

ACTIVE FACULTY**JENNINGS BAILEY, JR.***Professorial Lecturer in Law*

A.B. 1926, Princeton University; LL.B. 1930, The George Washington University. Member, Bailey and Larson 1933-41, Bailey, Stephens and Huettig 1942, 1946-. Principal Attorney, Office of Alien Property 1942-44; Vice-President and General Manager, Gyro Balance Corporation 1945-46. Professorial Lecturer in Law 1949-, The George Washington University.

Subject: Moot Court

CARVILLE DICKINSON BENSON*Professor of Law*

A.B. 1920, Johns Hopkins University; LL.B. 1923, S.J.D. 1926, Harvard University. In Practice of Law with Benson, Nock & Rowe, Baltimore (Md.) 1923-25; Assistant Professor of Law, 1926-29, Emory University; Assistant Professor of Law 1929-33, Associate Professor of Law 1933-43, Professor of Law 1943-, The George Washington University.

Subjects: Legal Method and Legal System, Real Property, Conveyances, Wills

JOHN PATRICK BURKE*Associate Professor of Law*

A.B. 1940, LL.B. 1941, The George Washington University. Law Clerk, U. S. Court of Appeals for the District of Columbia 1941-42; Assistant U. S. Attorney, District of Columbia 1942-48; Associate Professor of Law 1948-, The George Washington University.

Subjects: Civil Procedure, Legal Method and Legal System, Equity, Federal Jurisdiction

OSWALD SYMISTER COLCLOUGH*Professor of Law; Dean of the Law School*

B.S. 1920, United States Naval Academy; LL.B. 1935, The George Washington University; LL.D. 1946, Muhlenberg College; United States Navy 1920-49; Judge Advocate General 1945-48. Professor of Law and Dean of the Law School 1949-, The George Washington University.

Subject: Admiralty

CHARLES SAGER COLLIER*Professor of Law*

A.B. 1911, LL.B. 1915, S.J.D. 1932, Harvard University. In Practice of Law with Rounds, Schurman and Dwight (later Hughes, Schurman and Dwight), New York City 1915-19; Member Staff 1918-19, Cornell University Law School. Ezra Ripley Thayer Teaching Fellow 1931-32, Harvard University Law School; Member Faculty, Second Semester Dean of the Law School 1930-31. Professor of Law 1931-, The George Washington University.

Subjects: Constitutional Law, Jurisprudence, Taxation, Constitutional Law Seminar

ROBERT MCKINNEY COOPER*Associate Professor of Law*

A.B. 1929, West Virginia University; Ph.D. 1931, University of Wisconsin; J.D. 1934, University of Michigan. Special Assistant to the Attorney General of the United States, 1934-41; The Assistant to the General Counsel of the Federal Communications Commission, 1939-41; Special Counsel to the Bonneville Power Administration, Department of the Interior, 1941-43; Major, Military Government Division, War Department General Staff, U. S. Army 1943-46; Member 1946-47, McFarland and Sellers, Washington (D. C.); Associate Professor of Law 1947-, The George Washington University.

Subjects: Federal Jurisdiction, Criminal Law and Procedure, Agency, Corporations

GEORGE BOWDOIN CRAIGHILL

Adjunct Professor of Law

A.B. 1903, University of the South; LL.B. 1906, Georgetown University. Member McKenney, Flannery and Craighill; Lecturer 1914-24, Washington College of Law; Adjunct Professor of Law 1939- , The George Washington University.

Subject: Moot Court

ROGER ALLEN CUNNINGHAM

Assistant Professor of Law

B.S. 1942, LL.B. 1948, Harvard University. Navy Department 1942-44; United States Navy 1944-46; in Practice of Law, Boston (Mass.) 1948-49; Teaching Fellow 1949-50, Harvard University; Assistant Professor of Law 1950- , The George Washington University.

Subjects: Real Property, Security Transactions.

JAMES FORRESTER DAVISON

Professor of Law; Editor-in-Chief of the Law Review

A.B. 1921, LL.B. 1923, Dalhousie University; LL.M. 1924, S.J.D. 1929, Harvard University. Lecturer in Roman Law and Jurisprudence, 1924-28, Assistant Professor of Roman Law and Jurisprudence 1928-30, University of Toronto; Brandeis Research Fellow 1928-29, Research Fellow 1929-30, Harvard University; Assistant Professor of Law 1930-36, Associate Professor of Law 1936-45, Professor of Law 1945- , The George Washington University; Editor-in-Chief 1946- , *The George Washington Law Review*.

Subjects: Administrative Law, Current Decisions, Public Utilities, Administrative Law Seminar

JUSTIN LINCOLN EDGERTON

Professorial Lecturer in Law; Clerk of the Moot Court

A.B. 1920, LL.B. 1921, The George Washington University. In Practice of Law 1933-39, with Frank F. Nesbit, Washington (D. C.); Member 1939-47, Nesbit, Pledger and Edgerton, Washington (D. C.); Member 1947- , Cromelin, Townsend, and Kirkland, Washington (D. C.); Clerk of the Moot Court 1936- , Associate in Law 1936-41, Lecturer in Law 1943-47, Professorial Lecturer in Law 1947- , The George Washington University.

Subject: Moot Court

WILLIAM LEIGH ELLIS

Lecturer in Law

A.B. 1920, Hillsdale College; LL.B. 1933, LL.M. 1936, The George Washington University. Special Claims Examiner 1936-38, U. S. General Accounting Office; Attorney 1938-42, Principal Attorney 1942-45, Assistant to the Comptroller General of the United States 1945- ; Lecturer in Law 1942- , The George Washington University.

Subject: Legislation

***JOHN THEODORE FEY**

Associate Professor of Law

LL.B. 1940 University of Maryland; M.B.A. 1942, Harvard University. United States Marine Corps 1942-46; in Practice of Law, Cumberland, Md., 1946-49; Member of Maryland Legislature 1946-50; Associate Professor of Law 1949- , The George Washington University.

WILLIAM THOMAS FRYER

Professor of Law

A.B. 1922, LL.B. 1924, The George Washington University; J.D. 1925, Yale University. In Practice of Law with William Pepper Constable, Baltimore (Md.) 1924-26; Assistant Professor of Law 1926-29, Associate Professor of Law 1929-40, Professor of Law 1940- , The George Washington University.

Subjects: Evidence, Legal Method and Legal System, Personal Property

WILLIAM LESTER GRIFFIN

Assistant Professor of Law

A.B. 1941, Western Michigan College; LL.B. 1948, LL.M. 1949, University of Michigan. United States Army 1943-46; in Practice of Law, Kalamazoo, Mich., 1949; Assistant Professor of Law 1950- , The George Washington University.

Subjects: Contracts, Personal Property, Conveyances, Insurance

* On leave of absence 1950-51.

CONDER CAYWOOD HENRY*Adjunct Professor of Law*

A.B. 1915, LL.B. 1920, The George Washington University. Examiner 1915-24.
Principal Examiner, U. S. Patent Office 1924-41; Assistant Commissioner of Patents
1941-46; Manager, Washington Patent Department, Radio Corporation of America
1946-; Adjunct Professor of Law 1948-. The George Washington University.
Subject: Patent Moot Court, Patent Office Practice

PHILIP FIELD HERRICK*Professorial Lecturer in Law*

A.B. 1929, Williams College; LL.B. 1931, LL.M. 1936, The George Washington University. Assistant Editor, U. S. Law Week 1932-33; Assistant Counsel, National
Recovery Administration 1933-35; in Practice of Law with Barbour, Gannett & Pickett,
Washington (D. C.), 1935-39; Regional Director, Wage and Hour Division 1939-42;
U. S. Attorney for Puerto Rico 1942-48; Member, Appeal Board, Office of Contract
Settlement 1948-. Professorial Lecturer in Law 1948-. The George Washington
University.
Subject: Moot Court

JOHN WINGFIELD JACKSON*Adjunct Professor of Law*

B.S. 1928, University of Pennsylvania; LL.B. 1932, The George Washington University.
In Practice of Law 1932-36; Assistant U. S. Attorney for the District of Columbia
1936-41; Member, Jackson, Hannah & Jackson, Washington (D. C.), 1941-; Adjunct
Professor of Law 1948-. The George Washington University.
Subject: Moot Court

JOHN ALEXANDER KENDRICK*Assistant Clerk of the Moot Court*

A.B. 1942, LL.B. 1943, The George Washington University. In Practice of Law,
Washington (D. C.), 1946-; Assistant Clerk of the Moot Court 1948-. The George
Washington University.
Subject: Moot Court

JAMES ROBERT KIRKLAND*Adjunct Professor of Law*

A.B. 1927, LL.B. 1928, LL.M. 1929, The George Washington University; C.P.A.
(Delaware) 1933. Assistant U. S. Attorney for the District of Columbia, 1929-34;
Member 1938-39, Cromelin, Townsend, and Kirkland, Washington (D. C.); Judge
1940-; United States District Court for the District of Columbia; Lecturer in Law
1934-45; Adjunct Professor of Law 1945-. The George Washington University.
Subject: Moot Court

BOLITHA JAMES LAWS*Adjunct Professor of Law*

LL.B. 1913, LL.M. 1914, Georgetown University. Assistant U. S. Attorney for the
District of Columbia 1914-20; Assistant General Counsel, U. S. Shipping Board 1921-22;
Member, Cromelin & Laws, Washington (D. C.), 1922-38; Judge 1938-48; Chief Judge
1945-. United States District Court for the District of Columbia; Judge, U. S. Emer-
gency Court of Appeals 1943-; Adjunct Professor of Law 1939-41, Southeastern Uni-
versity; Adjunct Professor of Law 1947-. The George Washington University.
Subject: Moot Court

LOUIS LOSS*Professorial Lecturer in Law*

B.S. 1934, University of Pennsylvania; LL.B. 1937, Yale University. Attorney 1937-44,
Chief Counsel 1944-48, Division of Trading and Exchanges, Associate General Counsel
1948-. U. S. Securities and Exchange Commission; Lecturer in Law 1941-42, Catholic
University of America; Visiting Lecturer in Law 1947-. Yale University; Professorial
Lecturer in Law 1949-. The George Washington University.
Subject: S.E.C. Aspects of Corporate Finance

ELLIOTT DeJARNETTE MARSHALL*Adjunct Professor of Law*

LL.B. 1930, The George Washington University. In Practice of Law, Front Royal
(Va.), 1930-46; Judge, Seventeenth Judicial Circuit of Virginia 1946-; Adjunct
Professor of Law 1948-. The George Washington University.
Subject: Moot Court

LOUIS HARKEY MAYO

Assistant Professor of Law and Secretary of the Law School

B.S. 1940, United States Naval Academy; LL.B. 1949, University of Virginia; United States Navy 1940-47; Assistant Professor of Law and Secretary of the Law School 1950-. The George Washington University.

Subjects: Agency, Contracts, Criminal Law, Insurance

JOHN ALBERT MCINTIRE

Professorial Lecturer in Law

A.B. 1928, Wittenberg College; LL.B. 1931, University of Cincinnati; Research Fellow 1935-36, Harvard University Law School; Editor 1937-41, *Municipal Law Journal*; Executive Director 1937-41, National Institute of Municipal Law Officers; Faculty Editor-in-Chief 1932-42, *The George Washington Law Review*; Member of Appeal Board, Office of Contract Settlement 1946-; Instructor in Law 1931-33, Assistant Professor of Law 1933-38, Associate Professor of Law 1938-46, Professorial Lecturer in Law 1946-. The George Washington University.

Subjects: Municipal Corporations, Government Corporations

LEROY SORENSON MERRIFIELD

Associate Professor of Law

A.B. 1938, LL.B. 1941, University of Minnesota; M.P.A. 1942, Harvard University; Administration Fellow, Graduate School of Public Administration, Harvard University 1941-42; Attorney, Office of Price Administration 1942; Attorney, Antitrust Division, U.S. Department of Justice 1946-47; Assistant Professor of Law 1947-48, Associate Professor of Law 1948-. Acting Dean of the Law School 1948-49. The George Washington University.

Subjects: Legal Method and Legal System, Torts, Labor Law

ARTHUR SELWYN MILLER

Assistant Professor of Law

A.B. 1938, Willamette University; LL.B. 1949, Stanford University; United States Army Air Force 1941-46; Assistant Professor of Law 1950-. The George Washington University.

Subjects: Contracts, Torts, Sales, Public Utilities

GEORGE EDWARD MONK

Professorial Lecturer in Law

A.B. 1928, LL.B. 1930, LL.M. 1934, The George Washington University. In Practice of Law with Darr and Darr, 1930-34, with Frank J. Hogan 1934-41, with Hogan & Harrison 1945-, Washington (D. C.); Allied Military Government, Sicily and Italy 1943-45; Lecturer in Law 1947-48, Professorial Lecturer in Law 1948-. The George Washington University.

Subject: Moot Court

JAMES WARD MORRIS

Adjunct Professor of Law

A.B. 1912, University of North Carolina. In Practice of Law 1915-33; Special Assistant to the Attorney General 1933-34; Assistant Attorney General of the United States 1935-39; Judge 1939-. United States District Court for the District of Columbia; Adjunct Professor of Law 1939-. The George Washington University.

Subject: Moot Court

JAMES OLIVER MURDOCK

Professor of Law

Ph.B. 1916, University of Chicago; LL.B. 1924, Harvard University. Certificate 1921, Academy of International Law at The Hague. In Practice of Law with Cadwallader, Wickersham and Taft 1924-25, New York City; Assistant U. S. Attorney 1925-27, Southern District of N. Y.; Assistant Solicitor and Assistant Legal Adviser 1927-36, U. S. Dept. State; Counsel for United States 1920-44, before International Joint Commission, United States Canada, Secretary to American delegation 1928-29, International Conference of American States on Conciliation and Arbitration. Counsel for United States 1932, United States Sweden Arbitration; in Private Practice of Law 1937-46; Chairman, 1935-37, A.B.A. Section of International and Comparative Law; Lecturer 1945 and 1948 sessions, Inter-American Academy of Comparative and International Law, Havana, and member of Curatorium; Lecturer in Law, 1930-41; Adjunct Professor of Law 1943-46, Professor of Law 1946-. The George Washington University.

Subjects: Agency, Comparative Law, International Law, International-Comparative Law Seminar

FRANK HAMMETT MYERS*Adjunct Professor of Law*

LL.B. 1923, LL.M. 1924, The George Washington University. In Practice of Law with Norman B. Frost and Frederic N. Towers, Washington (D. C.), 1924-48; Judge, Municipal Court of the District of Columbia 1948-; Adjunct Professor Law 1948-; The George Washington University.

Subject: Moot Court

ALVIN LEROY NEWMYER*Adjunct Professor of Law*

LL.B. 1906, The George Washington University. In Practice of Law since 1906; Member Newmyer and Bress, Adjunct Professor of Law 1949-; The George Washington University.

Subject: Moot Court

SAUL CHESTERFIELD OPPENHEIM*Professor of Law*

A.B. 1918, A.M. 1920, Columbia University; J.D. 1926, S.J.D. 1929, University of Michigan. Instructor in Economics 1921-26, Teaching and Research Assistant to Dean of Law School 1926-27, University of Michigan; Assistant Professor of Law 1927-30, Associate Professor of Law 1930-40, Acting Dean, winter term 1948, Professor of Law 1940-; The George Washington University; Editor-in-Chief, 1942-46, *The George Washington Law Review*.

Subjects: Unfair Trade Practices, Federal Anti-Trust Laws, Trade Regulation Seminar

HERMAN ISRAEL ORENTLICHER*Associate Professor of Law*

A.B. 1913, LL.B. 1936, Harvard University. In Practice of Law 1936-37; Law Clerk, U. S. Court of Appeals for the District of Columbia 1938; Attorney, U. S. Housing Authority 1939-43; Assistant General Counsel, National Housing Agency and Housing and Home Finance Agency 1944-48; Associate Professor of Law 1949-; The George Washington University.

Subjects: Legal Method and Legal System, Negotiable Instruments, Sales, Security Transactions

CHARLES SYLVANUS RHYNE*Professorial Lecturer in Law*

LL.B. 1937, The George Washington University. In Practice of Law, Washington (D. C.) 1937-; General Counsel, National Institute of Municipal Law Officers 1938-; Lecturer in Law 1945, American University; Professorial Lecturer in Law 1949-; The George Washington University.

Subject: Aviation Law

RAYMOND STEVENS SMETHURST*Professorial Lecturer in Law*

B.S. 1930, Harvard University; LL.B. 1934, The George Washington University. Member of legal staff 1934-41, General Counsel 1941-49, National Association of Manufacturers; in Practice of Law 1949-; Professorial Lecturer in Law 1948-; The George Washington University.

Subject: Labor Law

FRANCIS GERALD TOYE*Professorial Lecturer in Law*

B.S. in E.E. 1927, Clarkson College of Technology; LL.B. 1932, The George Washington University. Patent Attorney, General Electric Company 1931-; Professorial Lecturer in Law, 1948-; The George Washington University.

Subject: Substantive Patent Law

WILLIAM CABELL VAN VLECK*Professor of Law*

A.B. 1908, LL.B. 1911, LL.D. 1948, The George Washington University; S.J.D. 1921, Harvard University. Member Summer Faculty 1924 and 1929 at University of Michigan, 1927 at Stanford University, 1934 at University of Chicago; one of the Advisers to the Reporter on Conflict of Laws 1926-34, American Law Institute; Research Fellow 1930-31.

Harvard University Law School; Instructor in Law 1912-16, Assistant Professor of Law 1916-19, Professor of Law 1919-; Secretary of the Law School 1912-20, Acting Dean of the Law School 1923-24, Dean of the Law School 1924-49. The George Washington University.

Subjects: Conflict of Laws, Torts

DAVID BENSON WEAVER

Assistant Professor of Law

A.B. 1943, Ohio Wesleyan University; LL.B. 1948, Western Reserve University. United States Army 1943-45; in Practice of Law 1948-49, Cleveland, Ohio; Assistant Professor of Law 1949-. The George Washington University.

Subjects: Real Property, Equity, Trusts

COMMITTEES*

THE DEAN'S COUNCIL

Carville Dickinson Benson
Charles Sager Collier
James Forrester Davison
William Thomas Fryer

Leroy Sorenson Merrifield
James Oliver Murdock
Saul Chesterfield Oppenheim
William Cabell Van Vleck

COMMITTEE ON ADMISSIONS

Carville Dickinson Benson, *Chairman*
Saul Chesterfield Oppenheim
Harold Griffith Sutton

COMMITTEE ON GRADUATE STUDIES

Charles Sager Collier, *Chairman*
James Forrester Davison
James Oliver Murdock
Saul Chesterfield Oppenheim

COMMITTEE ON SCHOLARSHIP

Herman Israel Orentlicher, *Chairman*
Carville Dickinson Benson
Leroy Sorenson Merrifield

LIBRARY COMMITTEE

James Oliver Murdock, *Chairman*
Robert McKinney Cooper
David Benson Weaver

GENERAL INFORMATION

INTRODUCTORY

The George Washington University Law School, established in 1826, discontinued, and reorganized in 1865, is the oldest law school in the District of Columbia. Its course of instruction is planned to prepare its graduates for the practice of law in any of the states of the United States or in foreign countries, the law of which is based on the Anglo-American legal system. It is also designed to prepare students for public service as lawyers in the Federal Government or the governments of the states. In 1900 the School took part in the organization of the

* The President of the University and the Dean and the Assistant Dean of the Law School are members ex officio of all committees.

Association of American Law Schools and it has been a member of the Association since that time. The School is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association.

THE LIBRARY

The Law School Library of 27,000 volumes contains the official reports of the decisions of the courts of last resort of all the states prior to the National Reporter System and of fourteen states complete to date; the National Reporter System, complete; the reports of the United States Supreme Court and lower federal courts, and the reports of federal administrative agencies; Shepard's Citations for the units of the Reporter System; the English Reprint and English Law Reports; the United States Statutes; the United States Code, Annotated, and the Federal Code, Annotated; reasonably complete sets of statutes of all of the states; the English statutes; the principal English and American digests and encyclopedias; collections of special reports and annotated cases; and the leading textbooks and legal periodicals.

The Library, which is on the fourth floor of Stockton Hall, is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday, 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday. Books and other materials do not circulate and must be used in the Library.

THE LAW REVIEW

The George Washington Law Review, published by the University, is edited by the Faculty and students of the Law School. It is devoted exclusively to state and federal public law. The location of the University in the national Capital, where the primary sources of federal public law may be observed in operation, affords an unexcelled opportunity for specialization in this field.

The *Review* is edited by a faculty editor-in-chief, a faculty board of associate editors, a board of departmental advisory editors, and a board of student editors. The student editors are chosen each year on the basis of scholarship.

RESEARCH IN PUBLIC LAW

Washington, the capital of the Nation, furnishes unsurpassed advantages for research in the fields of public law. In it are the offices of the major executive departments, the Congress, the Supreme Court of the United States, and four lower federal courts. In the executive departments and among the many independent establishments of the Federal Government there have been estimated to be between seventy-five and one hundred agencies, the activities of which involve the various branches of public law, particularly administrative law. The student of public law can study at first hand the work of these administrative agencies.

He also has available as sources for investigation their records of administrative adjudications.

Research in public law will be conducted under the supervision of members of the Faculty. The purpose of this research is to furnish means for training specialists in public law, either as government lawyers or as lawyers representing individuals or corporations in cases in which the Government is a party, and to assist in the analysis, clarification, formulation, and improvement of public law, substantive and procedural.

Candidates for the graduate degrees in the Law School and seniors who are eligible for the degree of Juris Doctor may pursue this work. Other students may be admitted with the special permission of the professor in charge.

COURSE OF STUDY FOR FOREIGN LAWYERS

This course of study is designed to meet the needs of lawyers who come from countries, the legal systems of which are based on the Roman or Civil Law. The objective is to provide an opportunity for such students to acquire an understanding of the fundamentals of the common law so that they may work intelligently with its materials and practitioners. In this program the students are not assigned to special classes but work in association with other students in the regular law subjects. No fixed program of courses is required. Each student's program is adapted to his individual needs. (See *below*, Master of Comparative Law.)

THE STUDENT BAR ASSOCIATION

Every student in the Law School is required to be a member of the Student Bar Association. This is organized to enable the student to become better acquainted with problems of the profession, to develop better professional ideals, and to bring about closer contact with members of the profession engaged in active practice of the law.

The work of the Student Bar Association is carried on by various committees and by group and general meetings of a professional and social nature. From time to time lectures are given by outstanding authorities on legal and professional problems.

The Placement Committee of the Student Bar Association cooperates with the University Placement Office in assisting students and graduates of the Law School to find employment.

PRACTICE AND PRACTICE COURT

The curriculum is planned to include such training in the fundamentals of practice as is feasible in a law school. Classroom instruction is conducted in the theories of pleading and procedure, trial and appellate

practice, and evidence. This instruction includes grounding in the principles of the new Federal Rules of Civil Procedure. In addition each senior student is required to participate in the work of the Practice or Moot Court. This includes trying a specified number of cases, both as a senior counsel and junior counsel. For students who are planning to practice patent law, a special section of the court is devoted exclusively to the trial of patent cases. Experience in preparing and arguing appellate court cases is also available through the Case Club Competition.

ORDER OF THE COIF

The Order of the Coif, a national honor society with chapters in thirty-eight law schools, aims "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship". The George Washington University Chapter was established in 1926. Members are elected each year from the highest-ranking 10 per cent of the graduating class of the Law School.

ADMISSION

APPLICATION FOR ADMISSION

An applicant for admission must obtain from the Office of the Director of Admissions an application blank which he must fill out completely and return with the application fee of \$3.00.

A recent photograph, with signature, of the applicant must be attached to the blank.

To insure prompt action, application should be filed not later than July 1 for the fall term, January 1 for the winter term, and May 1 for the summer term.

The applicant must request the registrar of each higher institution previously attended to mail directly to the Office of the Director of Admissions the transcript of his record, *even though credits were not earned*, together with an honorable dismissal from the institution last attended. The student must be in good standing as to scholarship and conduct, and must be eligible to return to the previously attended institution in the term for which he seeks admission to The George Washington University.

REQUIREMENTS FOR ADMISSION

For the Degrees in the Professional Course

Bachelor of Laws.—A Bachelor's degree awarded upon completion of a four-year course in an approved college or university is required. All pre-legal work must be of a satisfactory quality and distribution. No student will be admitted who has been in attendance at another law school and who, because of poor scholarship, is on probation or is ineligible.

ble to return to that school. From the applicants fulfilling the basic requirement of a college degree, a selection will be made by the Committee on Admissions.

The Juris Doctor degree is conferred as a recognition of completion with high rank of the full professional course, including experience in research and legal authorship. A student does not register as a candidate for this degree until his last year in the Law School.

ADVANCED STANDING

Advanced standing toward the degree of Bachelor of Laws may be granted only for work successfully completed in other law schools which are members of the Association of American Law Schools.

Advanced standing may not be granted for law work already counted toward the Bachelor of Arts or other pre-legal degree.

Students planning to attend summer school sessions at other law schools and desiring to use credits obtained at such schools in their course at this Law School must first have the courses they wish to take approved by the Dean. In no event will credits be recognized in excess of those which might be obtained in a similar period in this School.

Advanced standing toward the degree of Juris Doctor will not be granted.

For the Degrees in the Graduate Course

Candidates for graduate degrees must be accepted by the Committee on Graduate Studies.

Master of Laws.—A Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree from an approved law school are required. Candidates for admission must have attained an average grade on all work done for the Bachelor of Laws degree equivalent to the relative position of a *B* average in the standards of grading at this Law School, except that, in the discretion of the Committee on Graduate Studies, applicants otherwise eligible may be admitted on proof of experience and attainment as an alternative to the showing of a general average of *B* in the formal law school grades.

Master of Comparative Law.—The following are required: (1) the successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycee, or liceo (junior college); and (2) graduation in law from a recognized foreign university where training was in Civil Law.

Doctor of Juridical Science.—The following are required: (1) the degree of Juris Doctor from this Law School; or (2) the degree of Bachelor of Arts from an approved college, the degree of Bachelor of Laws or the equivalent, earned with high rank, from an approved law

school, outstanding capacity for scholarly work in the field of law, and acceptance as a candidate by the Committee on Graduate Studies of the Law School.

Unclassified Students

A person eligible for admission to regular standing but not a candidate for a degree may, at the discretion of the Dean, be admitted as an unclassified student.

A person who is in good standing as a candidate for a degree in another approved law school may, at the discretion of the Dean, be admitted as an unclassified student. Work taken by an unclassified student will not be accepted for credit toward a degree at this Law School.

REGISTRATION

Before attending classes each student must present himself in person for registration. No student will be registered in the Law School until proper credentials have been filed and approved (see "Admission", above).

Registration is for the term or session only.

A late-registration fee of \$5 will be charged each student who is permitted to register after the regular registration days.

Registration may be changed only with the permission of the Dean.

FEES AND FINANCIAL REGULATIONS

Application fee, non-refundable.....	\$3.00
Tuition fee, for each credit hour.....	12.00
For the degree of Doctor of Juridical Science:	
For work leading to and including the final examinations.....	360.00
Student Bar Association fee, for each term, or any part thereof except the summer term.....	2.00
Graduation fee.....	20.00
Fee for printing and filing summary of doctoral dissertation.....	5.00
Fee for special examinations, for each subject.....	5.00
Late-registration fee, charged each student who fails to register within the designated period.....	5.00
Service fee for late payment of tuition, see "Payment of Fees".....	1.00
Reinstatement fee, charged each student who is reinstated after being suspended for delinquency in fees.....	5.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of three certified transcripts of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described under "Health Administration", pages 26 and 27. These privileges, however, with the exception

of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each term are due and payable in advance at the time of registration.

Subject to the approval of the Comptroller, a student may sign a contract for term charges, except for fees payable in advance, permitting payments as follows:

Fall Term.—One third at the time of registration; one third on November 3; one third on December 4.

Winter Term.—One third at the time of registration; one third on March 3; one third on April 3.

A student who fails to meet payments when due but who pays his fees on or before the tenth of the month in which payment is due is charged a service fee of \$1. A student who fails to meet payments by the tenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5. A suspended student may not be reinstated for the term after two weeks from the date of suspension. Applications for reinstatement are to be made to the Dean.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean. Notification to an instructor is not an acceptable notice.

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Term.—Withdrawal dated on or before October 31, cancellation of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Winter Term.—Withdrawal dated on or before February 28, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges. In no case will tuition be reduced or refunded because of non-attendance upon classes.

Payment applies only to the term for which a registration charge is incurred and in no case will this payment be credited to another term.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

Withdrawal from a course or from the University between October 31 and the end of the fall term and between February 28 and the end of the winter term is permitted only in exceptional cases.

The grade of *F* (to be counted as zero) will be given in a course dropped without the approval of the Dean.

All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

SCHOLARSHIPS, PRIZES, LOAN FUNDS

Charles Worthington Dorsey Memorial Scholarship.—This scholarship, established as a memorial to Charles Worthington Dorsey, Bachelor of Laws '81, Master of Laws '82, is awarded upon the recommendation of the Faculty of the Law School to a needy and promising graduate of Columbian College or other division of the University, with a Bachelor of Arts or other equivalent degree, who has maintained an average of *B* as an undergraduate student and who desires to pursue the study of law as a full-time student. The scholarship covers tuition for the course leading to the first degree from the Law School, Bachelor of Laws or Juris Doctor, provided that the holder maintains an average of *B*. The right is reserved to suspend the benefits of the scholarship for cause at any time. The scholarship is awarded ordinarily once every three years.

Trustee Scholarships.—The Board of Trustees of the University has established seven scholarships, each of which provides full tuition for three years in the Law School. Applications will be accepted from graduates of accredited colleges, in the upper fifth of their class, who have demonstrated qualities of leadership in addition to scholastic attainment. These scholarships are valid for work taken in the morning classes of the academic year; they may not be used in the summer terms. To retain a Trustee scholarship, the holder is required to maintain a *B* average each year. Application must be made not later than June 15 preceding the academic year for which the scholarship is to be awarded. Requests for additional information may be made to the Dean of the Law School, The George Washington University, Washington 6, D. C.

All other scholarships are administered by the University Committee on Student Loans and Scholarships.

The following prizes are awarded annually in the Law School:

Ellsworth Prize.—The Ellsworth Prize of \$25, established by the late Mr. Fritz von Briesen, is awarded to the student doing the best work in the subject of Patent Law Practice.

John Bell Larner Prize.—This prize, established by the bequest of John Bell Larner, consists of a medal which is awarded annually to that member of the graduating class in the Law School who attains the highest average grade in the entire course for the degree of Bachelor of Laws.

John Ordronaux Prizes.—These prizes were established in 1909 by the bequest of John Ordronaux. The amount of \$50 is awarded annually to the student in the Law School who has attained the highest average grade in the first-year, full-time course; and \$50 to the student who has attained the highest average grade in the second-year, full-time course.

Through the generosity of friends of the University a number of loan funds are available to students in the Law School. Among them is the Henry Strong-William A. Maury Loan Fund established by the Henry Strong Educational Foundation in memory of Henry Strong and William A. Maury. Application for loans should be made to the Comptroller of the University.

REGULATIONS

Students in the Law School are subject to, and are expected to familiarize themselves with, the general University regulations stated in the University Catalogue.

AMOUNT OF WORK

Students without substantial outside employment may take a program of studies of fourteen hours a week in which the majority of credit hours must be in the morning sections. Students with substantial outside employment must take a limited program of studies not exceeding ten hours a week. Students taking a majority of their classes in the evening may not take more than ten credit hours a week.

ATTENDANCE

Regular attendance on classes is required and is necessary for successful work. A student who is deficient in class attendance in any subject may by action of the Faculty be barred from taking the examination in that subject.

RESIDENCE REQUIREMENTS

Attendance in the morning classes for the fall and winter terms is counted as residence for an academic year. Attendance in the evening classes for the fall and winter terms is counted as residence for three-fourths of an academic year. A morning student enrolled in a schedule of less than ten hours a week will receive residence credit in the ratio that the hours passed bear to ten. An evening student enrolled in a schedule of less than six hours a week will receive residence credit in the ratio that the hours passed bear to six. Attendance throughout the

Activities for Women before their registrations can be completed. In the women's residence halls, single rooms are \$30 and \$35 a month; double rooms are \$23 and \$28 a month a person. Meals are served at the Student Union. Applications for rooms should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women.

Men Students.—Welling Hall provides double room facilities for 102 students. Rooms rent for \$24 a month a person. Single and double rooms are provided for 203 students in Draper and Bradley Halls. These are temporary dormitories and residence is restricted to veterans of World War II who are enrolled for a minimum of twelve credit hours of academic work in the University. Single rooms are \$17 a month; double rooms are \$13 a month a person. The University maintains a limited number of temporary apartment units for married veteran students and their families subject to the same requirements for tenancy as above. Meals are served at the Student Union.

Application forms for reservations may be obtained from the Director of Activities for Men.

Information concerning private rooming and boarding facilities near the University for women students twenty-one years of age or older and for men students may be obtained at the offices of the Director of Activities for Women and the Director of Activities for Men. The reservation of rooms in private houses must be made by students.

STUDENT PLACEMENT OFFICE

The Student Placement Office provides assistance for students and alumni seeking full- and part-time employment. This office maintains a registry of vacancies in the Government and in private industry and refers qualified applicants for appointment. Information is also available on Civil Service examinations.

The prospective student who expects to earn part of his expenses and who does not have a definite appointment to a position should have the means of support for at least one term. The obtaining of a position is contingent on so many factors that immediate employment cannot be assured.

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is, on the Campus, a Student Health Clinic open from 9:00 A.M. to 5:00 P.M., with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school; (2) three visits by the University

physician or surgeon, office or residence (District of Columbia), in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing in the University Hospital for not more than one week during any twelve month period—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

The student is allowed if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each term; (5) the above regulations apply also during the summer term of the University.

The University is not responsible for injuries received in inter-collegiate or intra-mural games, or in any of the activities of the departments of physical education.

PLACEMENT SERVICE FOR GRADUATES

The Law School takes a continuing interest in the placement of its graduates. The Dean and Faculty cooperate with the Placement Committee of the Student Bar Association and the University Placement Office in assembling information regarding opportunities for legal positions throughout the country. A register of openings for graduates is maintained based upon information received from alumni of the school, law firms, and government agencies. Students are invited to discuss their placement problems with the appropriate Law School officials and the Placement Committee.

THE DEGREES

IN THE PROFESSIONAL COURSE

These degrees are Bachelor of Laws (LL.B.) and Juris Doctor (J.D.)

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF LAWS

To be recommended for this degree the student must have completed a residence period of not less than three academic years (four years

for evening students) and eighty credit hours with a general average of at least C, including the course in Moot Court.

*Combined Degrees of Bachelor of Arts and Bachelor of Laws.**—A candidate for the combined degrees of Bachelor of Arts and Bachelor of Laws must: (1) complete three years of satisfactory college work; (2) fulfill the residence requirement of at least thirty credit hours of Columbian College, the School of Government, or the School of Education; (3) obtain the approval of the Dean of the college concerned at the time of entering the Law School; (4) complete, without a failure in any subject and with an average grade of not less than middle C, the work of the first year in the Law School. The degree of Bachelor of Arts will be conferred at the end of the first year in the Law School, provided the above conditions have been satisfied. The degree of Bachelor of Laws will be conferred upon the satisfactory completion of the law course. Law school work taken at another institution will not satisfy the law requirement for the combined degrees.

*Combined Degrees of Bachelor of Science in Engineering and Bachelor of Laws.**—For those students who desire to enter the branches of the legal profession in which a background in engineering is necessary a six-year curriculum is offered, leading to the combined degrees of Bachelor of Science in Engineering and Bachelor of Laws. A candidate for the combined degrees must conform to the residence and scholarship requirements of the School of Engineering throughout the period of preparation for the degree in engineering. His scholarship level for the junior and senior years must be acceptable to both the School of Engineering and the Law School. During the junior and senior years he must complete: (1) the required courses in engineering, (2) the 28 credit hours of courses required in the first year of the Law School, and (3) such electives as he needs to satisfy the 140 credit-hour requirement for the degree in engineering. The first year work in the Law School must be completed without a failure in any subject and with an average grade of not less than middle C. Upon the satisfactory completion of the senior year, the degree of Bachelor of Science in Engineering will be conferred. The student will then continue his studies in the Law School; upon the satisfactory completion of which the degree of Bachelor of Laws will be conferred.

REQUIREMENTS FOR THE DEGREE OF JURIS DOCTOR

This degree is conferred as a recognition of the completion at the George Washington University Law School, with high rank, of the full

* Registration for work toward the combined degrees is limited to (1) regular students of the University in continuous attendance since the 1947 winter term registration, (2) students who have completed not less than 20 months of continuous service in the armed forces of the United States during World War II and who have been in regular and continuous attendance at this University since the beginning of the 1948 fall term.

professional course including experience in research and legal authorship. To be recommended for this degree the student must have completed: (1) a residence period of not less than three academic years (four years for evening students) in the Law School; (2) eighty credit hours with a general average of at least *B* including the course in Moot Court and one of the following courses: Comparative Law, Jurisprudence, or one of the graduate seminars; and (3) one year of acceptable service on the board of student editors of *The George Washington Law Review*, election to which is subject to regulations laid down by the Faculty. Students taking the combined Arts and Law or Engineering and Law courses are not eligible for this degree.

HONORS

The degree of Bachelor of Laws or of Juris Doctor "with distinction" will be awarded students who obtain a general average of *A* in the work for the degree.

IN THE GRADUATE COURSE

These degrees are Master of Laws (LL.M.), Master of Comparative Law (M.Comp.L.), and Doctor of Juridical Science (S.J.D.).

REQUIREMENTS FOR THE DEGREE OF MASTER OF LAWS

To be recommended for this degree the student must have completed a residence period of not less than two terms. Such residence should normally be continuous. All requirements for the degree must be completed in this Law School and in a period not exceeding two years after registration for work for the degree. The student must have completed with a minimum average of *B* twenty credit hours in courses listed in the law curriculum as graduate subjects (in the 400 group) except that in individual cases third-year subjects may be approved for inclusion in the program of study if not previously taken.

REQUIREMENTS FOR THE DEGREE OF MASTER OF COMPARATIVE LAW

To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed satisfactorily twenty-four credit hours in approved subjects in the curriculum of the Law School or of such other departments of the University as the Faculty of the Law School shall approve.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF JURIDICAL SCIENCE

To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have pursued a course of study and research designated by his consultative

committee and approved by the Committee on Graduate Studies. At the conclusion of his first year of residence, or at such other time as the Committee on Graduate Studies may set, the candidate must pass an oral examination in those fields of study selected by the consultative committee. This examination shall be conducted by the consultative committee and such other members of the Faculty and qualified experts from other research institutions as may be selected by the Committee on Graduate Studies.

Not later than the date specified in the University calendar the candidate must submit to the Dean one typewritten original and two legible and complete carbon copies of his dissertation in its final form. The dissertation must contain a summary of from 2,500 to 3,000 words inserted as an appendix. An additional original typewritten copy of this summary must be submitted for publication. To be acceptable the dissertation must, in the opinion of the examining committee, constitute a substantial contribution to the field of law concerned and be suitable for publication. Additional information will be supplied by the Chairman of the Committee on Graduate Studies.

The summaries of accepted dissertations will be printed in a volume forming a number of the University BULLETIN. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

The courses of instruction listed below are subject to change. The University reserves the right to withdraw any course announced.

The number which precedes the name of a course indicates the term in which that course is offered. An odd number indicates that the course is offered in the fall term; an even number, that it is offered in the winter term; and a double number (e.g., 241-42), that it begins in the fall and continues in the winter term. The letter "x" following an odd course number (e.g., 141x) indicates that the course, normally offered in the fall term, is given in the winter term. The letter "x" following an even course number (e.g., 112x) indicates that the course, normally offered in the winter term, is given in the fall term.

First-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third year courses, from 301 to 400; and graduate courses, from 401 to 500.

The number of hours of credit given for the satisfactory completion of a course is indicated in parentheses after the name of the course. Thus, a year course giving two hours of credit each term is marked (2-2), and a term course giving two hours of credit is marked (2).

Morning classes begin at 9:10 a.m. Evening classes begin at 5:50 p.m.

102 *Agency* (2)

Cooper, Murdock, Mayo

Problems of agency in the conduct of business. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

112x *Contracts* (4)

Griffin, Miller, Mayo

Promissory obligation: offer and acceptance, consideration, statute of frauds, formal instruments, rights of third parties, assignments, joint obligations, conditions, performance, discharge. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

123x *Criminal Law and Procedure* (4)

Cooper, Mayo

Elements of criminal liability; specific crimes; combinations of persons in crime; criminal procedure. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

129 *Legal Method and Legal System* (4)

Fryer, Benson, Merrifield,
Burke, Orentlicher

Introduction to study of substantive and procedural law. Examination of basic concepts with training in method and technique of case law, based upon modern records in state and federal cases and individual practice in the use of law books and legal writing. Importance of language in law and legal reasoning, both apart from and in connection with statutory interpretation and as affected by the use of precedents.

under the doctrines of stare decisis, law of the case, and res judicata. Background on development of the English and American legal systems; organization of the judiciary and the bar, stressing enforcement of ethical standards. Fryer and Benson, *Cases on Legal Method*; Fryer and Benson, *Cases on Legal System*. Morning and evening sections. (Also offered 1950 summer term.)

Law 129x—same as Law 129, but offered winter term. Morning and evening sections.

133x Personal Property (4)

Fryer, Griffin

Concepts of property, possession, and ownership; legal relations with respect to chattels and documentary intangibles created by gift, sale, pledge, lien, bailment, etc. Fraser, *Cases on Property*, Vol. II, 2d ed.; Fryer, *Readings on Personal Property*, 3d ed. Morning and evening sections. (Also offered 1950 summer term.)

137-38 Real Property (2-2)

Benson, Weaver, Cunningham

Real property; introduction; estates, seisin, landlord and tenant; future interests at common law and under the statutes of uses and wills; merger, elementary study of remoteness and powers; adverse possession; prescription; natural rights. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

141 Torts (4)

Van Vleck, Merrifield, Miller

Civil liability for harms to legally protected interests. Thurston and Seavey, *Cases on Torts*. Morning.

Law 141x—same as Law 141, but offered winter term. Evening.

205 Civil Procedure (4)

Burke

Function and composition of pleadings, including their relation to proof. Emphasis is upon reforms, as exemplified by modern code provisions and the Federal Rules of Civil Procedure. Clark, *Cases on Pleading and Procedure*, 2d ed. Morning and evening sections.

214x Constitutional Law (4)

Collier

Historical introduction; judicial approach and methods; doctrine of the separation of powers; powers of the National Government; the federal system; relation of the state courts and the federal courts. Dodd, *Cases on Constitutional Law*, 3d ed. Morning and evening sections. (Also offered 1950 summer term.)

223x Domestic Relations (2)

Marriage, annulment, and divorce; rights of husband and wife; rights of parent and child; infants. (Not offered in 1950-51.)

231 Equity (4)

Burke, Weaver

Specific performance of contracts; equitable conversion; statute of frauds; mutuality; conditions; defenses; equitable servitudes; powers of an equity court; effect of decrees, interpleader, bills of peace, cloud on title, rescission and reformation, mistake. Chaffee and Simpson, *Cases on Equity*, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)

Law 231x—same as Law 231, but offered winter term. Morning.

233-34 *Evidence* (2-2)

Fryer

Functions of court and jury; witnesses; hearsay, opinion, and circumstantial evidence; proof of authenticity and contents of writings. McCormick, *Cases on Evidence*, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)

246 *Negotiable Instruments* (4)

Orentlicher

Bills of exchange, promissory notes and checks, especially under the Negotiable Instruments Law. Caselook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

248 *Conveyances* (2)

Benson, Griffin

Conveyances, rents, easements, profits, licenses, covenants running with the land, and recording. Kirkwood, *Cases on Conveyances*, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)

251 *Restitution* (4)

Legal remedies for restitution of benefits obtained or conferred by performance of contract, misrepresentation, mistake, and coercion. (Not offered in 1950-51.)

253x *Unfair Trade Practices* (4)

Oppenheim

Unfair trade practices at common law and under state and federal statutes. Trade-marks and trade names, including Trade Mark Act of 1946. Misappropriation. False advertising at common law. Federal Trade Commission jurisdiction over misrepresentation practices. Lotteries and premiums. Disparagement of competitor's goods and business methods. State Fair Trade Acts (resale price maintenance). Price discrimination (State and Federal Robinson-Patman Act). State statutes prohibiting sales below cost. Inducing breach of contract. Commercial bribery. Miscellaneous business torts constituting unprivileged interferences with advantageous business relations. Oppenheim, *Unfair Trade Practices, Cases, Comments and Materials* (1950). Morning and evening sections.

254 *Wills* (2)

Benson, ———

Formation and revocation of wills; testate and intestate succession. Mechem and Atkinson, *Cases on Wills and Administration*, 3d ed. Morning and evening sections. (Also offered 1950 summer term.)

256 *Sales* (2)

Orentlicher, Miller

Common law, Uniform Sales Act and related statutes. Intention to transfer property interest (specific, unascertained, and future goods); specification and appropriation; cash and conditional sales; C.O.D., F.O.B., and C.I.F. shipments; negotiable bills of lading and warehouse receipts; trust receipts; fraud on seller, retention of possession and bulk sales; remedies of seller and buyer, including suit for price, stoppage in transit, seller's warranties; inspection. Morning and evening sections. (Also offered 1950 summer term.)

258 *Partnerships* (2)

Nature and formation of partnerships, rights in partnership property, relations of partners among themselves, remedies of creditors, dissolution and winding up. Morning and evening sections.

- 303-4 *Administrative Law* (2-2) Davison
Legislative setting for administrative bodies; judicial control of administrative action, public utilities, taxation, alien laws. Federal Trade Commission, workmen's compensation, etc. Katz, Cases on Administrative Law. Morning section (4)—fall term; evening section (2-2)—fall and winter terms.
- 311 *Corporations* (4) Cooper
Legal requirements as to contributions of capital; powers and rights of corporations, corporate officials, and shareholders. Berle and Warren, Business Organization—Corporations. Morning and evening sections. (Also offered 1950 summer term.)
- 315x *Conflict of Laws* (4) Van Vleck
Study of cases involving foreign elements; principles of jurisdiction and limitations upon its exercise; procedure, torts, workmen's compensation, contracts, property, family law, administration of estates, business associations. Cheatham, Dowling, Goodrich, and Griswold, Cases on Conflict of Laws, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)
- 317 *Creditors' Rights* (4)
Remedies of unsecured creditors: judgments, fraudulent conveyances, creditors' agreements, equity and statutory receiverships, and bankruptcy. The general approach is that of law administration.
Summer term 1950.
- 321-22 *Current Decisions* (2-2) Davison
Required of, and limited to, members of the student staff of the *Late Review*. Time to be arranged.
- 324x *Federal Jurisdiction* (2) Cooper, Burke
Constitutional origins and powers of federal courts; sources of law applicable to them; business and extent of jurisdiction of federal courts. McCormick and Chadbourn, Cases on Federal Courts. Morning and evening sections.
- 326x *Insurance* (2) Griffin, Mayo
The insurance device in life, property, and other risks. Vance, Cases on Insurance, 3d ed. Morning and evening sections.
- 327-28 *International Law* (2-2) Murdock
Customary and treaty rights and duties of states; diplomatic and consular agents; treaty interpretations; nationality laws; international courts; claims procedure; war; neutrality. Hudson, Cases on International Law, 2d ed. Morning and evening sections.
- 329-30 *Labor Law* (2-2) Merrifield, Smethurst
Laws applicable to strikes, picketing, boycotts, etc.; organization and representation of employees; negotiation of collective bargaining contracts; inter-union and intra-union relations; settlement of wage disputes (arbitration, mediation, conciliation). Cases, legislative and administrative materials, readings. Morning section (4)—fall term; evening section (2-2)—fall and winter terms.

332x Legal Accounting (2)

A study of elementary accounting principles and techniques, and an introduction to the interpretation of financial statements. Evening.

333-34 Legislation (2-2)

Ellis

Justiciable aspects of the legislative process; forms and types of statutes; principles of statutory interpretation, structure, and drafting. Read & McDonald, *Cases and Materials on Legislation*. Evening. (Also offered 1950 summer term.)

335-36 Moot Court (2-2)

Laws, Morris, Craighill, Kirkland, Edgerton, Myers, Marshall, Jackson, Herrick, Monk, Newmyer, Kendrick

To be taken in the senior year. Prerequisite: Law 205 and 231-34. Morning and evening sections.

345 Substantive Patent Law* (2)

Toye

Substantive patent law; patentability; revision, use, and enforcement of patents. Evening.

346 Patent Office Practice* (2)

Henry

Rules of practice; appeal and interference procedure. Evening.

349-50 Patent Moot Court* (2-2)

Henry, Bailey

This course may be elected instead of Law 335-36 to satisfy the Moot Court requirement. Both subjects may not be counted toward a degree. Evening.

351 Public Utilities (2)

Davison, Miller

Limits of regulation of businesses affected with public interest; ascertainment of value of property used for the public service and the fixing of adequate rates of return. Welch, *Cases on Public Utility Regulation*, 3d ed. Evening.

Law 351x—same as Law 351, but offered winter term. Morning.

358 S.E.C. Aspects of Corporate Finance (2)

Loss

Federal and state regulation of the distribution of securities, the securities markets, and the corporate structure, and management of public utility and investment companies. Primarily the aspects of corporate finance dealt with by the Securities and Exchange Commission. Evening.

362x Security Transactions (4)

Orentlicher, Cunningham

Security interests in real and personal property, their creation, transfer, enforcement, and extinguishment, together with security problems in the fields of suretyship and bankruptcy. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

* Patent law students should take Law 345 and Law 349 concurrently in the fall term and Law 346 and Law 350 concurrently in the winter term. Law 349-50 may be taken only by students who are taking or have taken Law 345.

- 373x Taxation (4)** Collier
Introductory course on basic concepts of federal tax system. Attention given to state inheritance and income taxes. Problems of jurisdiction to tax, construction of tax statutes, methods of judicial review of administrative actions in the tax field, modern excise taxes on business concerns. Magill and Maguire, *Cases on Taxation*, 4th ed. Morning.
- 375-76 Taxation—Federal (2-2)**
Federal income, gift, and estate taxes, and selected federal tax problems. Evening.
- 378x Federal Anti-Trust Laws (4)** Oppenheim
Restraints of trade at common law. Public policy under Sherman Anti-Trust Act of 1890 and Federal Trade Commission and Clayton Acts, including mergers, consolidations and monopoly. Loose association activities (price-fixing agreements, trade associations, international cartels). Specific practices such as resale price maintenance, delivered price systems, exclusive arrangements and tying devices, trade boycotts. Patents and copyrights under anti-trust laws. Remedies. Oppenheim, *Cases on Federal Anti-Trust Laws*. Evening.
- 381x Trusts (4)** Weaver
Creation, elements, administration, enforcement, termination. Liabilities to and of third persons. Resulting and constructive trusts. Bogert, *Cases on Trusts*, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)
- 403-4 Administrative Law Seminar (2-2)** Davison
Research seminar course in special problems, including the study of specific administrative agencies, federal or state. Time to be arranged.
- 406 Aviation Law (2)** Rhyne
Procedure before Civil Aeronautics Board; legal problems arising in connection with air transportation and airports, international conventions and organizations. Evening.
- 407x Admiralty (2)** Colelough
Federal and state jurisdiction; jurisdiction over waters, craft, contracts, torts, crimes, in equitable matters, etc.; laws applicable to maritime workers and maritime liens. Evening.
- 415-16 Comparative Law (2-2)** Murdock
Historical and comparative study of some of the institutions and principles of the Roman and modern Civil Law (law of South and Central America and most of the Continent of Europe) compared with those of the Common Law; the influence of the former upon the latter. Evening.
- 421 Constitutional Law Seminar (2)** Collier
Research seminar in contemporary problems in constitutional law. Time to be arranged.
- 430x International—Comparative Law Seminar (2)** Murdock
Research seminar in contemporary problems. Time to be arranged.

434 Interstate Commerce Commission Law and Procedure (2)

Interstate Commerce Act; the Interstate Commerce Commission; practice and procedure before the Commission. Evening.

435x Jurisprudence (4)

Collier

History of jurisprudence; schools of jurists, particularly the nineteenth century schools; sociological jurisprudence; theories of justice; the nature of law; law and morals; law and the state; the scope and subject matter of law, sources and forms of law; the traditional element; analysis of general legal concepts. Hall, Readings in Jurisprudence. Evening.

447 Municipal Corporations (2)

McIntire

Municipal corporations: organization, powers, functions, and legal relations, of local governmental units. Tooke and McIntire, Cases on Municipal Corporations. Evening. (Also offered 1950 summer term.)

448 Government Corporations (2)

McIntire

Federal corporate agencies: organization, powers, functions, and legal relations of functional governmental units separately incorporated. Casebook to be announced. Prerequisite: Law 447. Evening.

451 Trade Regulation Seminar (2)

Oppenheim

A research seminar in specific current problems relating to federal anti-trust laws and unfair trade practices. Time to be arranged.

DEGREES CONFERRED

BACHELOR OF LAWS

NOVEMBER 11, 1949

Aiken, William David	Wash.	Fox, Dorothy Schwartz	Ohio
Anton, Alfred John	Va.	A.B. 1947, The George Washington University	
A.B. 1948, University of Missouri			
Apgar, Harry Emanuel, Jr.	Va.	Gabletsa, Mary Jane	N.H.
A.B. 1938, Lafayette College		A.B. 1947, Wellesley College	
Archer, Cirt Alexander	Miss.	Geniza, Theodore Anthony	Conn.
Avancena, Manuel Claude	D.C.	Gingell, Robert Arthur	Md.
Bathory, Joseph Patrick	Ill.	A.B. 1948, The George Washington University	
Baumgarten, Stephen Harvey	N.Y.	Gordon, Herbert Stephan	Ind.
Beall, John Numan, Jr.	D.C.	A.B. 1947, Indiana University	
Behun, Joseph Andrew	Ohio	Gottshall, William Holt	D.C.
Bennet, Joseph Campbell, Jr.	Va.	A.B. 1948, Allegheny College	D.C.
Blodgett, Norman Stack	D.C.	Grier, Harold Thomas	W.Va.
B.S. 1941, Worcester Polytechnic Institute		Harper, Richard Howard	S.D.
Bortner, Jeffrey Clair	Pa.	Hart, Seward Lyman	
Bradley, William Orlando	Nev.	A.B. 1938, Yankton College	Mass.
Bumer, Charles Theodore, Jr.	Va.	Haskell, Boris	
A.B. 1947, Cornell University		A.B. 1941, Harvard University	
Burns, Walter William, Jr.	N.Y.	Herrick, Harold Colton III	Mo.
B.E.E. 1942, Cornell University		B.S. in E.E. 1937, B.S. in Eng. Adm. 1938, Washington University	
Carter, Harold Martin	Va.	Houscal, Robert Wright, Jr.	S.C.
B.S. 1942, Roanoke College		B.S. 1943, The Citadel	
Cope, Harland Burleigh	Kans.	Hoyt, John Gregory	D.C.
A.B. 1946, University of Kansas		B.S. 1943, United States Military Academy	
Davis, Sadye Jane	Pa.	Jackson, Philip Grant	Iowa
A.B. 1947, The George Washington University		Jacobson, Odd Thomas	N.D.
DeBloss, Samuel J.	Ohio	A.B. 1948, The George Washington University	
DeRosa, Edward Francis	Mass.	Jernberg, Dale Leonard	Md.
A.B. 1947, The George Washington University		Jones, Jack Clayton	Okla.
Dibner, Richard Eugene	N.Y.	B.S. in Ch.E. 1939, Oklahoma Agricultural and Mechanical College	
B.M.E. 1943, College of the City of New York		Kellison, John Ray	Va.
Doane, John Emil	Md.	B.S. 1941, University of Richmond	
B.E.E. 1946, The George Washington University		Kelly, Edward Joseph	Pa.
Donelson, Kenneth William	Nebr.	B.S. in Ch.E. 1939, Drexel Institute of Technology	
Downs, Harold Alfred	Va.	Kohlso, Frederick Henry	Md.
Earle, John Howard	D.C.	B.S. in M.E. 1943, University of Maryland	
B.S. 1943, Pennsylvania State College		Kopp, Paul Joseph	Va.
Ealy, Paul Wesley	Calif.	A.B. 1942, Lehigh University	
A.B. 1946, University of California at Los Angeles		A.M. 1941, Duke University	
Fair, Robert James	Ind.	Lagomarcino, Paul Donald	Ill.
A.B. 1947, The George Washington University		A.B. 1943, University of Iowa	
Falloon, James Hugh, Jr.	Nebr.	Leary, Robert George	N.Y.
A.B. 1948, The George Washington University		Lindberg, Dale Sheldon	D.C.
Fanger, Louis Alfred	N.J.	A.B. 1943, Bowdell University	
A.B. 1939, Rutgers University		Lokke, Bernard Melneaux	N.Y.
Feldman, Melvin Martin	D.C.	MacMillan John Howard	Md.
Filippone, Frank Joseph	Md.	Mahar, Daniel John, Jr.	N.Y.
Flanders, Robert Lee	Tex.	Maher, Francis Patrick	Tex.
A.B. 1947, The George Washington University		Maltman, William Leneave	Ore.
Fleming, Lester Leroy	Pa.	B.S. 1943, University of Oregon	
Forman, Edward	N.Y.	Markowitz, Irving	N.I.
A.B. 1943, College of the City of New York		Mayes, Basil Lamar	Calif.
		McDonough, Russell Charles	Mass.

McQueen, Robert Keith A.B. 1944, The George Washington University	Iowa	Smith, Thomas Warner A.B. 1948, The George Washington University	D.C.
Melvin, Flavell Bryan, Jr.	Va.	Steenerson, Palmer Seymore	D.C.
Mendelssohn, Sydney Henry	Pa.	Steinmeyer, Robert Jay	D.C.
Meyers, Leonard Bernard	D.C.	B.S. in E.E. 1945, University of Nebraska	
Milour, Alfred Donald	Okla.	Stetson, Rufus Edwin, Jr.	Maine
Miller, Herbert John, Jr. A.B. 1948, The George Washington University	D.C.	A.B. 1947, Bowdoin College	
Miller, Robert Preston B.S. in M.E. 1943, Cornell University	N.Y.	Stewart, David Alfred, Jr.	Mass.
Moore, Charles Clifton, Jr.	D.C.	Stuart, Jasper Edwin	D.C.
Moore, Waldo Hawthorne	Va.	Sussholz, Leonard B. A.B. 1948, The George Washington University	N.Y.
Morgan, Don Earle	Ky.	Tavener, Frank Brennan	Va.
Morrison, William Llewellyn B.S. 1939, United States Coast Guard Academy	N.J.	Taylor, Harry Earl, Jr. A.B. 1948, The George Washington University	Md.
Nevin, John Irving, Jr.	N.Y.	Thorniley, Robert Miller	D.C.
Nichols, Louis N.	D.C.	Threadgill, William James A.B. 1947, University of Mississippi	Miss.
O'Donerty, Daniel Fairfax	Va.	Townsend, Robert Arnold A.B. 1943, Harvard University	Va.
Palmer, Lowell Richard	Va.	Umstead, Lyman John A.B. 1948, The George Washington University	Pa.
Parker, O. B.	Md.	Vaccaro, Camillo Jimmie, Jr.	D.C.
Pickens, Leonard Leroy	Okla.	Wagman, Theodore David A.B. 1939, A.M. 1940, Boston University	Mass.
Ratner, Max	D.C.	Walker, Dale Bryan, Jr.	N.M.
Reynolds, Gary Stewart	N.Y.	Watkins, William Henry B.S. in E.E. 1940, University of Maryland	D.C.
Riley, Jeremiah Thomas	Mont.	Wayland, Clarence Raymond	Va.
Roberts, John Sumnerfield, Jr. B.S. 1941, University of Virginia	Va.	Whitwell, Sanford McCallum B.S. in M.E. 1944, Cornell University	Pa.
Romero, Theodore Robert	Md.	Williams, John Charles	N.D.
Rosenberg, Seymour Morton (With distinction)	N.Y.	Williams, Leonard John II	Md.
B.E.L. 1940, College of the City of New York		Young, Maynard Elmer B.S. 1947, United States Coast Guard Academy	W.Va.
Sadler, Marvin Phillip A.B. 1947, The George Washington University	D.C.	Zaskalicky, Julius John B.E. 1942, Yale University	Conn.
Sander, Dora A.B. 1942, Radcliffe College	Md.		
Scarlet, Angelo John A.B. 1948, The George Washington University	Va.		
Sheridan, Philip Henry B.S. in E.E. 1944, Worcester Polytechnic Institute	D.C.		

FEBRUARY 22, 1950

Alwine, Alton Jackson	Miss.	Christopherson, Olaf Warren A.B. 1946, The George Washington University	Minn.
Arfman, Herbert Edward	Ohio	Church, Abiah Adelbert A.B. 1948, The George Washington University	Fla.
Armstrong, Sylvan Bernard	D.C.	Coleman, Carl Shaughnessy	Tenn.
Atkinson, Charles Fred A.B. 1948, The George Washington University	Ohio	Cook, Rae Timmins B.S.C. 1940, Temple University	Pa.
Baldrige, Reid A.B. 1948, The George Washington University	D.C.	Cooke, David Ohmer B.S. 1941, M.S. 1942, New York State College for Teachers, Buffalo	N.Y.
Baskin, William Maxwell	Va.	Creeger, Hugh Cassell, Jr.	W.Va.
Boebe, William Bovell A.B. in Govt. 1946, The George Washington University	D.C.	Crewe, William Penn	Md.
Booth, Robert Edward	Iowa	Daniel, William Jeffers B.Ch.E. 1947, North Carolina State College	N.C.
Bramow, Alvin	D.C.	DePaul, Joseph Alfred	Md.
Bristol, Ethel Cleo	Colo.	Donnelly, William James, Jr.	Md.
Brown, Herman Cabbage A.B. 1948, University of North Carolina	Del.	Dougherty, Frank Robert A.B. 1946, The George Washington University	Md.
Camby, John Joseph B.S. 1941, Carnegie Institute of Technology	Pa.	Dowell, Earl Simeon B.S. 1947, University of Illinois	Ill.
Cameron, William Kimmel A.B. 1948, The George Washington University	Ohio		

Dwyer, John Joseph A.B. 1948, The George Washington University	D.C.	Lang, Edward Alexander B.S. 1943, University of Florida	Fla.
Ferrill, Grace Cecelia A.B. 1948, The George Washington University	R.I.	Lapham, George Seely, Jr. Lerner, Theodore Nathan Liken, Robert Lee	Ga. D.C. Okla. Md.
Frank, Robert Berliner A.B. 1940, University of North Carolina	D.C.	Lindamood, Joseph Ganam, Jr. A.B. 1943, The University of Maryland	Md. Va.
Fratt, Nicholas Diller III Fredericks, Ilet Henry Freeman, Robert M. B.E.E. 1944, The College of the City of New York	D.C. Okla. N.Y.	Lucas, Charles William Lynch, William Charles Mann, Donegan A.B. 1947, The George Washington University	Va. Conn. D.C.
Friedman, Sol Furst, Howard Irving A.B. 1943, University of California at Los Angeles	Md. Va.	Martini, Anthony Francis A.B. 1948, The George Washington University	Pa.
Futoran, Josef B.S. 1935, M.S. 1936, The College of the City of New York	Va.	McGinnis, Robert Allen McIntyre, Fred Louis A.B. 1948, The George Washington University	W.Va. Va.
Gifford, Yale Wesley A.B. 1947, The George Washington University	Kans.	McKeel, Charles Baynor III Miehr, William Benjamin Mulin, Eugene Francis, Jr. A.B. 1945, Brown University	N.C. Mo. D.C.
Goren, Howard J. Graybeal, John Olin B.S. 1943, College of Puget Sound	Md. Wash.	Mussemann, Ashby Milton, Jr. B.S. 1947, University of Maryland	D.C.
Green, Samuel A.B. 1948, The George Washington University	D.C.	Newmyer, Armand Nolte, Carl Robert, Jr. A.B. 1948, College of William and Mary	D.C. D.C.
Gregg, James Calvin Grove, Jesse Barrett, Jr. B.S. 1939, Virginia Polytechnic Institute	Pa. Va.	O'Brian, Edward Day B.S. 1947, Iowa State College	Iowa
Grubb, Stephen F. Hamby, John Gordon B.S. in M.E. 1947, University of Kentucky	Nebr. Ky.	Oda, Robert Yasuo Oram, Robert B.Ch.E. 1943, Rensselaer Polytechnic Institute	Hawai Va.
Healey, Alan John A.B. 1948, The George Washington University	D.C.	Parish, John Poindexter Paston, Norman Clarence Pfeiffer, Frederick Thompson A.B. 1947, University of North Carolina	Va. S.D. D.C.
Helzer, Charles William B.S. in E.E. 1945, Georgia Institute of Technology	Fla.	Pollack, Leonard Herman Posson, Raymond Lee, Jr. Reagan, James Edwin Rhone, Mary Elizabeth Richards, William Robert Rudpath, Robert Vance Rommel, Wilfred Herzer B.S. 1937, North Dakota State College	Pa. Va. D.C. Pa. Md. Ind. D.C.
Hillman, Jack Allan Holbrook, Ollie James Isom, Clifford Clinton B.S. 1939, Kansas State College	D.C. Ky. Ill.	Rosenthal, Alan Henry Sasaki, Hiroshi Schneider, Walter Henry B.S. 1944, Virginia Polytechnic Institute	D.C. Hawai N.J.
Jackson, Thomas Lester Johnson, Norton Steele Jones, Cullen Bryant, Jr. A.B. 1948, The George Washington University	Md. Md. Ind.	Shapiro, David Sharp, Daniel DeWitt B.S. 1939, Northeastern University	N.Y. Mass.
Jordan, George Sanford Julien, Carl Alden B.S. 1945, University of Washington M.S. 1947, University of Notre Dame	D.C. Oreg.	Sheff, Irving Hyman A.B. 1948, The George Washington University	Mass.
Kahn, Fritz Reiner A.B. 1948, The George Washington University	Md.	Smith, Dudley Burcham B.S. 1945, California Institute of Technology	Oreg.
Kayson, David Kerr, Thomas Moore, Jr. A.B. 1940, Lafayette College	D.C. N.J.	Steiner, Paul Llewyn Stewart, Francis John A.B. 1948, West Virginia University	D.C. Pa.
Kitts, Willard Frederick A.B. 1943, Amherst College	Mass.	Stiles, Meredith Newcomb, Jr. A.B. 1946, Amherst College	N.J.
Kokulis, Paul Nicholas B.S. 1944, Worcester Polytechnic Institute	N.H.	Sukalo, Charles B.S. in Ch.E. 1944, Newark College of Engineering	N.J.
Korn, Seymour Krist, Fred George	N.Y.	Sullivan, Arthur Victor, Jr.	D.C.
Kytile, Stuart Frederick A.B. 1948, The George Washington University	N.Y. Md.	Tait, Reid Clifford	Md.

Taylor, Edward Rathbun A.B. 1947, Lafayette College	D.C.	Wicker, George Stanley A.B. 1930, Emory University	Ga.
Thurmond, Cornelius Brooks, Jr.	Ga.	Widman, Charles Louis	D.C.
Travaglini, Vincent D.	Va.	Wing, Robert Claude	Maine
Turkal, Donald Lloyd	Ma.	B.S. 1915, United States Naval Academy	
Vinciguerra, John Vincent A.B. 1930, University of Akron	Ohio	M.B.A. 1939, Harvard University	
Vitale, Michael Joseph	N.J.	Withers, John Lewis	N.C.
Weaver, Gilbert Earl, Jr. A.B. 1948, Lenoir-Rhyne College	N.C.	B.S. 1940, Davidson College	
Weed, Norman Broadwell A.B. 1938, Stanford University	D.C.	A.M. 1941, University of North Carolina	
Whitaker, Edward Stephen A.B. 1942, King College	Tenn.	Wolk, Reuben	Calif.
White, Robert Lynn B.S. 1947, Marietta College	W.Va.	B.S. 1938, University of Maryland	Pa.
		Yokley, William Ross, Jr.	

MAY 31, 1950

Atkinson, Ethel Kathleen B.S. 1928, Carnegie Institute of Technology A.M. 1948, Western Reserve University	Ohio	Cherwek, Stanley A.B. 1940, The George Washington University	Mass.
Ayers, Theodore Aley A.B. 1941, University of Virginia	Va.	Cheslow, Ernest B.C.E. 1930, College of the City of New York	N.Y.
Bain, Cody Barish, Benjamin J. B.S. in E.E. 1946, Illinois Institute of Technology	Okla. Mich.	Chudzik, John Stephen A.B. 1948, The George Washington University	N.Y.
Barney, Donald Roof A.B. 1949, The George Washington University	Ariz.	Cochran, Robert Reid B.S. in C.E. 1947, Tufts College	N.J.
Bauknight, William Cooper, Jr. B.S. 1942, University of Virginia	Va.	Cohen, Saul Benjamin A.B. 1947, The George Washington University	D.C.
Becker, Martin Stanley Beckwith, Thomas Larson, Jr.	D.C. N.J.	Compton, Ross Harrington B.S. 1947, Massachusetts Institute of Technology	Va.
Bell, Edward Leroy B.S. 1946, Illinois Institute of Technology	Ohio	Crammond, James Darwin Crane, Esther Sibel (With distinction)	D.C. N.M.
Bell, Jay Richard Benson, Jacques Marie B.S. 1947, Utah State University	Utah Utah	A.B. 1940, The George Washington University	
Biram, James Raymond B.E. 1948, Yale University	Conn.	Curry, Stowers Leigh, Jr. A.B. 1948, The George Washington University	Va.
Blake, George Francis Blake, Martin B.S. 1947, Northeastern University	Md. D.C.	Day, Ernest Herbert A.B. 1941, Oberlin College	Ohio
Blatchford, Walter Larned B.S. 1933, United States Naval Academy	D.C.	Dickson, James Meek Dixon, William Joseph	S.C. Md.
Bock, Eugene William B.S. 1948, Texas Christian University	Tex.	Dowell, Arthur Edward III B.S. in E.E. 1943, Princeton University	D.C.
Beantley, James Cranford B.B.A. 1947, University of Georgia	N.Y.	Downing, Leslie Burgess B.S. 1920, United States Military Academy	Va.
Brewster, Mary Sanford Brill, Edward Pope, Jr.	D.C.	Dumaine, Gabriel Romain A.B. 1948, The George Washington University	Va.
Bundock, John Paul David, Jr. B.S. in E.E. 1948, Tufts College	Md. D.C.	Elliott, William Homer, Jr. A.B. 1940, Wesleyan University	N.J.
Bush, Joseph Francis B.S. 1947, Mount St. Mary's College	D.C.	Engelthaler, Fred Edward B.S. 1938, Illinois Institute of Technology	Ill.
Burton, Dale Leon Caldwell, Randolph Foster, Jr.	Kans. Tenn.	Favarella, Fiodie Paul Foley, James Kieran B.S. 1945, United States Merchant Marine Academy	Pa. N.Y.
Canwell, William James A.B. 1948, The George Washington University	N.Y.	French, William Thomas B.C.E. 1943, University of Florida	Fla.
Carter, Sidney B.C.E. 1943, College of the City of New York	N.Y.	Fried, Alfred Sigmund	Md.
Caruso, Lawrence Robert A.B. 1949, The George Washington University	N.J.		

Galane, Morton Robert	N.Y.	Loomis, Jerome Lathrop	Wis.
B.E.E. 1946, College of the City of New York		E.J.B. 1915, Wisconsin State Teachers College, Whitewater	
Ginsberg, Albert	Md.	A.M. 1943, Northwestern University	Philippines
Goeway, Bruce Anderson	Mass.	Lopez, Cornelio Orial	
A.B. 1943, Colgate University		A.B. 1927, University of Iowa	Md.
Goldstein, Benjamin	N.Y.	Mack, John Halford	
B.S.S. 1931, M.B.A. 1932, College of the City of New York		B.S. 1917, University of New Hampshire	
Gourley, Roy George	Pa.	Manning, Charles Madison	Ky.
B.S. 1948, University of Alabama		A.B. 1947, Union College	
Gray, Daniel William	Mass.	Marks, Solomon	Md.
Hall, Joseph Earl	W.Va.	B.S. 1937, College of the City of New York	
A.B. 1949, Marshall College		Martin, Marshall Alden, Jr.	Va.
Hallberg, Ernest Van, Jr.	Fla.	Martin, Watt Nicholas	Va.
A.B. 1942, University of Florida		Missey, Edward Gabriel	Wyo.
Hancock, Quinlan Harris	Va.	A.B. 1942, A.M. 1945, University of Wisconsin	
Handy, John Bruce, Jr.	D.C.	Moore, Jack Martin	Md.
A.B. 1943, Washington and Lee University		A.B. 1949, The George Washington University	
Harmon, Robert Brooks	Md.	Muller, Raymond Carl	Md.
B.S. 1941, University of Maryland		B.S. 1949, University of Maryland	
Hattis, Russell Elmer	Ill.	Mullinnix, Allen Prather	D.C.
B.S. in E.E. 1947, University of Illinois		B.S. 1919, United States Naval Academy	
Hendershott, Susan Jane	Md.	M.S. 1926, Yale University	Ohio
Hiers, Jasper Theodore III	N.C.	Murrish, Everett Clark	
Hill, William Bethel, Jr.	Va.	A.B. 1947, Harvard University	Va.
B.S.C. 1941, University of Virginia		Norvell, Robert Joseph	
Holford, Bond Larry	Md.	B.S. 1947, University of Wisconsin	Nev.
Hollingsworth, Gerald Eugene	Md.	Novakovich, Nada	D.C.
Houston, James Knox	D.C.	O'Dea, Thomas Emmett	Pa.
Hutchinson, Eileen Marie	Ohio	Odza, Hugh Malcolm	
Janson, Lars Edward	Va.	A.B. 1947, Pennsylvania State College	Vt.
A.B. 1948, The George Washington University		Otterman, Harvey Boyd, Jr.	
Johnson, Leighton Eugene	Minn.	A.B. 1949, The George Washington University	
A.B. 1948, The George Washington University		Patton, Arthur Gordon	Va.
Johnson, Richard Carl	Md.	A.B. 1946, Yale University	
Jones, Darrell Lloyd	Tex.	Pearson, Beverly Stocking	Md.
Kaiser, Stanley Mortimer	D.C.	A.B. 1940, Vassar College	
Kalb, Vernon Fredric	Ky.	Peisner, Arthur A.	Md.
B.S. 1947, University of Kentucky		Pendergrass, John Mullahd	Va.
Kappler, Charles Theodore	D.C.	A.B. 1945, Kalamazoo College	
A.B. 1942, Yale University		M.P.A. 1946, Wayne University	Tex.
Kelley, Frank William	Mich.	Phillips, Gordon Allison	
Kemer, Frank Conrad	Md.	Ph.B. 1947, University of Chicago	D.C.
A.B. 1949, The George Washington University		Philpitt, Frederick Charles	Ohio
Kirschbaum, Amiel	D.C.	B.S. 1947, University of Maryland	Miss.
B.S. 1937, University of Maryland		Reth, Robert Karl	
Klavans, Stanley	D.C.	Rich, Francis Earl	
Klostermann, Wolfgang Ekert	Ill.	B.S. 1941, United States Naval Academy	Wyo.
Kolodny, Joseph George	D.C.	Ries, Carl Gilbert	
A.B. 1935, Harvard University		B.S. 1947, University of Wyoming	Minn.
Kornblatt, Julius	N.Y.	Robbins, Glenn Kingsland	
Koutoulakos, Louis	Va.	B.S. 1947, Washington University	Pa.
A.B. 1949, The George Washington University		Rodgers, James Edwin	Tex.
Kozlowski, Joseph John	Ill.	Romero, Mario Savadra	
Lainof, Robert Ivan	Va.	B.S. 1939, National University of Mexico	Fla.
B.S. 1939, North Carolina State College		Rood, George Henry	
Lavine, Irvin Arthur	Md.	A.B. 1939, University of Florida	S.D.
B.A.F. 1947, Catholic University of America		Roubideaux, Ramon Arthur	D.C.
LeVine, Carl Ralph	Mich.	Rowe, Willis Case	
B.S.E. 1930, M.S.E. 1938, University of Michigan		A.B. 1949, The George Washington University	Va.
Levy, Donald	Md.	Rutledge, John	N.Y.
B.S. 1947, University of Maryland		Saffitz, Abraham Alan	
		A.B. 1936, Cornell University	

Schnappert, Joseph Matthew, Jr. A.B. 1948, Queens College	N.Y.	Steinberger, Hugh Marion B.S. 1941, University of Virginia	D.C.
Scholtz, Edward Karl	Nebr.	Stephens, William Theodore	Md.
Schulberger, Eugene	Va.	Sullivan, Thomas Vincent	N.Y.
Schultz, Herman David	N.Y.	A.B. 1942, New York University	
Sheeran, James Joseph	N.J.	Talaya, Ben	Md.
Sheridan, Philip Regis	Pa.	Tashjian, Lee Charles A.B. 1949, The George Washington University	Md.
A.B. 1948, The George Washington University		Usery, Harry McRae	Va.
Shoemaker, William Robert	Ala.	Vance, John Thomas	Md.
Shoup, Wilson Elliott	Va.	A.B. 1947, University of Montana	
A.B. 1947, Indiana University		Varonis, Paul George	Va.
Silverman, Aaron	D.C.	Walsh, Richard Vernell Ed B. 1948, Southern Illinois University	Ill.
A.B. 1948, The George Washington University		Woodling, Francis Albert	Md.
Skinner, Henry Ross	Wyo.	A.B. 1946, The George Washington University	
A.B. 1947, University of Wyoming		Yarnoff, Lewis Mills	D.C.
Smith, Chester Horace	Nev.	Young, Jack Martin	Ohio
Stehl, Edward III	Va.	B.S. 1945, Case Institute of Technology	
A.B. in Govt. 1940, The George Washington University			
Steinbauer, Walter Henry, Jr. B.S. 1947, Emory and Henry College	D.C.		

JURIS DOCTOR

NOVEMBER 11, 1949

Cavanagh, John Edward A.B. 1941, University of Oregon	Conn.	Seidel, Arthur Harris B.S. 1942, College of the City of New York	N.Y.
Dixon, Rod Paul	Utah	A.M. 1945, University of Michigan	
A.B. 1947, University of Utah		Stewart, Rodner Ward	D.C.
Earle, William Keln	Pa.	A.B. 1944, Carleton College	
B.S. 1940, United States Coast Guard Academy		A.M. 1934, University of Chicago	
Minnick, John Bradley	Va.	Ph.D. 1938, Harvard University	
A.B. 1935, Amherst College		Woodbury, Wallace Richards	Utah
Netterville, Victor Samuel	Ind.	A.B. 1947, University of Utah	
A.B. 1947, Indiana University			
Pettigrew, Wilbur B.	Va.		
B.S. 1930, State Teachers College, Maryville, Mo.			
M.S. 1940, Iowa State University			

FEBRUARY 22, 1950

Millman, Max Roland B.S. 1947, The College of the City of New York	N.Y.	Siegel, Abraham B.S. 1940, The College of the City of New York	Calif.
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MAY 31, 1950

Breslauer, Ruth Cooper (With distinction) B.S. 1945, The George Washington University	D.C.	Reid, James Sharp A.B. 1947, Connell University	D.C.
Donnelly, Henry Joseph, Jr. B.S. 1938, University of Pennsylvania	Va.	Rein, Martin Gardner (With distinction) B.M.E. 1945, College of the City of New York	N.Y.
Goldsbrough, George Joseph, Jr. B.S. 1947, United States Military Academy	Md.	Sweetzer, Henry Becker B.S. 1947, United States Naval Academy	Pa.
Patty, Clarence Ralph, Jr. B.S. 1940, University of Tennessee	Tenn.		

MASTER OF LAWS

NOVEMBER 11, 1949

Bailey, William Alfred LL.B. 1948, The George Washington University	Tex.	Boroughs, Lewis Edward LL.B. 1948, The George Washington University	N.C.
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Brain, William Herbert B.S. 1944, University of Illinois LL.B. 1948, The George Washington University	Ill.	Manning, Glenn Franklin LL.B. 1948, University of Alabama	Ala.
Chang, Richard I-Feng A.B. 1943, St. John's University LL.B. 1949, DePaul University	D.C.	Page, Helen Bell LL.B. 1948, The George Washington University	D.C.
Embrey, Lemuel Jackson A.B. 1937, LL.B. 1949, The George Washington University	Va.	Pickens, John Kenneth A.B. 1939, The George Washington University	D.C.
Guimond, Joseph Alexandre A.B. 1931, LL.B. 1933, Western Reserve University	Ohio	Roberts, Richard Mansfield LL.B. 1948, The George Washington University	Md.
Hudgins, John Jefferson LL.B. 1949, The George Washington University	D.C.	Russell, William David A.B. 1936, LL.B. 1938, University of Missouri	Mo.
Hudson, Dugald Walker B.S. 1940, Presbyterian College LL.B. 1949, The George Washington University	S.C.	Sylvester, Malcolm Duncan B.S. 1925, United States Naval Academy J.D. 1939, The George Washington University	La.
Kait, Harry Carl B.S. 1928, Temple University LL.B. 1938, Rutgers University	N.J.		

FEBRUARY 22, 1950

Choulas, James George LL.B. 1949, The George Washington University	N.Y.	McLaurin, Lillian Catherine A.B. 1937, LL.B. 1939, Vanderbilt University	Miss.
Cotter, Francis Aloysius LL.B. 1949, The George Washington University	Md.	B.S. 1941, George Peabody College for Teachers	
Gardner, Edith Rose A.B. 1943, University of California at Los Angeles LL.B. 1948, The George Washington University	Va.	Munves, William A.B. 1932, College of the City of New York	Va.
Hobbes, Alan Buxton A.B. 1939, Washington and Lee University LL.B. 1947, The George Washington University	Fla.	J.D. 1936, New York University	D.C.
Kardy, Leonard Thomas LL.B. 1949, The George Washington University	Md.	Narron, Wiley LL.B. 1943, The George Washington University	Tenn.
Littman, Simon LL.B. 1931, University of Maryland	D.C.	Preston, Edwin Page LL.B. 1948, Washington and Lee University	W.Va.
McGrail, Edward Hugh A.B. 1943, St. Peter's College LL.B. 1948, Georgetown University	N.J.	Reynolds, Chester Forrest LL.B. 1949, The George Washington University	D.C.
		Whitesel, James Warren B.S. 1941, Wake Forest College J.D. 1948, The George Washington University	

MASTER OF COMPARATIVE LAW

NOVEMBER 11, 1949

Beyen, Karel Herman Juris Candidatus 1943, University of Utrecht Juris Doctorandus 1948, University of Amsterdam	Netherlands	Del Russo, Alessandra Luini Doctor Litterarum 1939, State University, Milan Doctor Jurisprudence 1943, State University, Pavia	Italy
--	-------------	--	-------

FEBRUARY 22, 1950

Bourdon, Edouard Docteur en Droit 1938, Liege University	Belgium	Fisher, John Hannus J.D. 1931, University of Prague	Czech.
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MAY 31, 1950

Altman, Gerald B.S. 1943, LL.B. 1949, Boston University	Mass.	Leary, Robert George LL.B. 1949, The George Washington University	D.C.
Bartimo, Frank Antonio A.B. 1941, Clark University LL.B. 1944, The George Washington University	Mass.	Levin Joseph LL.B. 1949, The George Washington University	Md.
Blessing, Melvin Junior B.C.E. 1940, Cornell University LL.B. 1949, Georgetown University	Va.	Long, George Edward LL.B. 1949, The George Washington University	M2.
Bronsough, Alfred Taylor B.S. 1939, J.D. 1949, The George Washington University	D.C.	Moore, Charles Clifton, Jr. LL.B. 1949, The George Washington University	Va.
Buldain, Frank Javier A.B. 1933, LL.B. 1935, Baylor University	Tex.	Nowlin, Joe Franklin LL.B. 1949, University of Arkansas	Ark.
Coggins, John Wesley LL.B. 1949, The George Washington University	N.C.	Palmer, Lowell Richard LL.B. 1949, The George Washington University	Va.
Drees, George Calvin B.S. 1945, University of Alabama LL.B. 1948, The George Washington University	D.C.	Pellerzi, Leo Maurice LL.B. 1949, The George Washington University	D.C.
Earle, John Howard B.S. 1943, Pennsylvania State College LL.B. 1949, The George Washington University	D.C.	Pettigrew, Wilbur B. B.S. 1934, Missouri State Teachers College M.S. 1939, State University of Iowa J.D. 1949, The George Washington University	Iowa
Ehrlich, Bernard Herbert A.B. 1947, LL.B. 1949, The George Washington University	D.C.	Richwine, Francis Kost B.S. 1941, Pennsylvania State College LL.B. 1949, The George Washington University	Pa.
Galina, Victor John LL.B. 1941, Georgetown University	Mass.	Rousar, Edward Everett LL.B. 1949, The George Washington University	Okla.
Gilmore, Frank Peter B.S. 1927, M.D. 1929, Loyola University LL.B. 1949, The George Washington University	Ill.	Stanley, Earl R. B.S. 1941, Kent State University LL.B. 1949, The George Washington University	Ohio
Gorman, Vincent Andrew LL.B. 1948, St. John's University	N.Y.	Steenerson, Palmer Seymore LL.B. 1949, The George Washington University	D.C.
Gravatte, Robert Howerton, Jr. A.B. 1943, LL.B. 1947, University of Virginia	D.C.	Steinz, Clare Julia LL.B. 1949, The George Washington University	Pa.
Halen, John Thomas A.B. 1949, Brooklyn College LL.B. 1949, St. Johns University	Va.	Sumney, Ans Long LL.B. 1949, University of Richmond A.B. 1946, West Virginia University	W Va.
Harper, Richard Howard LL.B. 1949, The George Washington University	W Va.	Swartz, Christian LeFevre B.S. 1947, University of Pennsylvania LL.B. 1946, Temple University	Va.
Hart, Seward Lyman A.B. 1938, Yankton College LL.B. 1949, The George Washington University	S.D.	Triviz, Edward Ernest A.B. 1943, New Mexico College of Agriculture and Mechanic Arts LL.B. 1949, The George Washington University	N.M.
Hodges, Willard Jefferson, Jr. LL.B. 1949, University of Alabama	Ala.	Turrou, Edward Arnold A.B. 1942, LL.B. 1948, The George Washington University	Tex.
Housell, Robert Wright, Jr. B.S. 1943, The Citadel LL.B. 1949, The George Washington University	S.C.	Watkins, William Henry B.S. 1949, University of Maryland LL.B. 1949, The George Washington University	D.C.
Kaplan, Harold Irving B.S. 1943, University of Maine LL.B. 1948, Harvard University	Mass.	Webster, John Mark B.S. 1943, University of Minnesota LL.B. 1947, The George Washington University	Va.
Kiechel, Walter, Jr. A.B. 1941, University of Nebraska LL.B. 1949, Yale University	Nebr.	Wyatt, John Walton B.S. 1948, State Teachers College, Troy, Ala. LL.B. 1947, University of Florida	Fla.
Kueller, Ralph Rudolph A.B. 1948, LL.B. 1949, The George Washington University	Utah		
Kunz, Karl Michael Ph.D. 1941, Providence College LL.B. 1947, Georgetown University	R.I.		

STUDENTS REGISTERED

SUMMER TERM 1949

FALL AND WINTER TERMS 1949-50

A			
Abbey, Vincent H. D.	D.C.	Altschuler, Oscar	N.Y.
A.B. 1947, University of Washington		Alvey, Ernest Brandon	Va.
Abbott, Frank LeRoy	Mo.	LL.B. 1949, The George Washington University	
A.B. 1939, Central College, Mo.		Amidon, Robert Horace	D.C.
Abelson, Allan Joseph	Md.	Amster, Morton	N.J.
B.S. 1949, Temple University		B.S. in E.E. 1948, Rutgers University	
Abrahamson, Joseph Labe	Va.		
Abramowitz, Charles	N.Y.	Anderson, Earl Edward	W.Va.
A.B. 1948, LL.B. 1949, The George Washington University		B.S. 1948, A.M. 1949, West Virginia University	
Abrams, Ida Ulman	D.C.	Anderson, Edward James	N.Y.
A.B. 1949, Duke University		B.S. 1947, Siena College	
Abramson, Milton E.	N.Y.	Anderson, Robert Reynolds, Jr.	Va.
B.E.A. 1941, College of the City of New York		B.S. 1931, University of Richmond	
Ackerly, Robert Louis	N.Y.	Anderson, William Lawrence	Md.
Ackerman, Harry	N.Y.	B.C.E. 1925, Ohio State University	
Adams, Robert Louis	Va.	Anderson, William Walter	Ill.
A.B. 1949, Washington and Lee University		Andrews, Paul Jacob	Pa.
Addison, Francis Girault	D.C.	A.B. 1918, Amherst College	
B.S. 1947, Washington and Lee University		LL.B. 1942, Dickinson College	D.C.
Adler, Irving	Va.	Andrews, William Taylor	
B.S. 1939, New York University		B.E.E. 1944, The George Washington University	
Agayoff, Theodore Daniel	Conn.	LL.B. 1949, Albany Law School	D.C.
A.B. 1949, The George Washington University		Angle, William Ward	Mich.
Ahern, Frank Leo	D.C.	Annis, Robert James	N.Y.
B.S. in M.E. 1944, Cornell University		Ansher, Harold	
Aiken, William David	Wash. D.C.	A.B. 1939, Brooklyn College	N.Y.
Alawine, Alton Jackson	Mss.	Ansher, Norton	
Albamonte, Eugene	D.C.	B.E.E. 1949, The George Washington University	
Albertson, Harold Francis	Va.	Anton, Alfred John	Va.
A.B. 1936, Earlham College		A.B. 1948, University of Missouri	
Aldhizer, Carthon Evans	Va.	Apear, Harry Emanuel, Jr.	Va.
Alduk, Thomas Joseph	D.C.	A.B. 1918, Lafayette College	Wis.
Ale, Charles William	Va.	App, Oliver Leo	D.C.
A.B. 1943, Hampden-Sydney College		Applestein, David	
LL.B. 1949, Washington and Lee University		A.B. 1949, The George Washington University	
Allen, Edward Carlton, Jr.	D.C.	Archer, Crt Alexander	Miss.
B.S. 1918, United States Coast Guard Academy		Artman, Herbert Edward	Ohio
Allen, Edward Clayton	Md.	Armour, Jack E.	N.Y.
A.B. 1948, Gettysburg College		B.S. 1916, Brooklyn College	
Allen, Meredith Ernest	Okla.	Arnold, Thomas Oren	Tex.
A.B. 1937, LL.B. 1937, University of Oklahoma		B.S. in E.E. 1944, LL.B. 1949, University of Texas	
Alcocer, Leslie Eugene	Minn.	Aronson, Sylvan Bernard	D.C.
B.M.E. 1949, University of Minnesota		Asbury, Glenn Cameron	Ore.
Alster, Caliste Jay	Ill.	B.S. 1946, University of Denver	
B.S. 1948, Massachusetts Institute of Technology		M.S. 1947, Syracuse University	Va.
Altman, Gerald	Mass.	Ashford, Robert Sidney	
B.S. 1943, LL.B. 1949, Boston University		A.B. 1948, Princeton University	Tex.
Altmann, Andrew Taylor	Md.	Ashley, Robert Fredericks	N.Y.
B.S. 1941, University of Maryland		Asin, Hy	Ohio
LL.B. 1948, The George Washington University		Atkinson, Charles Fred	
		A.B. 1948, The George Washington University	Ohio
		Atkinson, Ethel Kathleen	
		B.S. 1928, Carnegie Institute of Technology	
		A.M. 1940, Western Reserve University	

Ault, John Miller	D.C.	Barnes, John Lockard	Md.
Austin, Hampton Lambert	Va.	A.B. 1948, Western Maryland College	
Auten, Howard Leonidas	D.C.	Barnhart, Arthur Gooding	D.C.
Avancena, Manual Claude	D.C.	Bartimo, Frank Antonio	Va.
Axtell, George Clifton, Jr.	Va.	A.B. 1941, Clark University	
Ayers, Kingdell Navarre	D.C.	LL.B. 1944, The George Washington University	
B.S. 1941, United States Coast Guard Academy		Barton, Fred Hubert	D.C.
Ayers, Theodore Alley	Va.	Baskin, Alan Irwin	Pa.
A.B. 1941, University of Virginia		A.B. 1949, Pennsylvania State College	
B			
Bachrach, Morton W.	Va.	Baskin, James Dollar	Tex.
B.S. 1947, Rouse College		B.S. 1946, United States Naval Academy	
Bacon, James Everett, Jr.	Md.	Baskin, William Maxwell	D.C.
Bagby, Mary Lawton	Md.	Bastian, David Charles	D.C.
A.B. 1945, The George Washington University		A.B. 1948, University of Maryland	
Baglin, Joseph Michael	N.Y.	Bathory, Joseph Patrick	Ill.
Bagley, Kenneth Alexander	N.Y.	Bastin, James Franklin	Minn.
Bain, Cody	Okla.	Bauknight, William Cooper, Jr.	D.C.
Bains, George Washington	Va.	B.S. in Comm. 1943, University of Virginia	
B.S. 1945, United States Naval Academy		Baum, Norman	Va.
LL.B. 1951, University of Alabama		A.B. 1948, Bucknell University	
Baird, Donald Benson	Pa.	Baumgarten, Stephen Harvey	N.Y.
A.B. 1948, University of Pittsburgh		Baylison, Richard Norman	N.J.
Bakeman, Robert Atherton	Md.	Beall, John Ninian, Jr.	Va.
A.B. 1932, Middlebury College		Beardmore, Walter Harvey	Md.
Baker, Carl Wilfred	Ohio	Beasley, Jess Lee	Va.
B.S. 1948, Ohio State University		A.B. 1936, Phillips University	
Baker, Gwynn Robinson	Ohio	M.S. 1941, University of Oklahoma	
B.S. in Ch.E. 1948, Purdue University		Beatty, Alta Mae	D.C.
Baker, Raymond Harold	D.C.	Bechtold, Royal Arthur	Ind.
A.B. 1940, Western Michigan College		B.S. 1948, Indiana University	
M.B.A. 1949, University of Texas		Beck, John Albert	Mo.
Baker, Rex Harding	Ill.	A.B. 1949, University of Tulsa	
A.B. 1948, University of California at Los Angeles		Becker, Martin Stanley	D.C.
Baker, Robert Clifford	Wash.	Beckler, David Zander	Va.
A.B. 1948, University of Minnesota		B.S. 1950, University of Rochester	
Belavage, Albert Alphonsus	D.C.	LL.B. 1943, The George Washington University	
B.S. 1947, University of Pennsylvania		Beckwith, Thomas Larson, Jr.	N.J.
Baldridge, Reid	D.C.	Beebe, John Elliott, Jr.	Kans.
A.B. 1948, The George Washington University		A.B. 1917, Municipal University of Wichita	
Balfour, Don Arthur	D.C.	Beebe, William Howell	D.C.
A.B. 1945, The George Washington University		A.B. 1946, The George Washington University	
Bandy, Alva Harlan	Kans.	Behun, Joseph Andrew	Ohio
B.S. 1947, Kansas State College		Beimford, Louis A.	Ohio
LL.B. 1949, Washburn Municipal University of Topeka		B.S. 1948, Miami University	
Barber, Alvin Thomas	D.C.	Belk, Raymond Fulton	D.C.
B.S. 1931, Susquehanna University		Belk, Harry Clinton	S.C.
Barber, Frederick Willard	Calif.	A.B. 1943, Wofford College	
A.B. 1941, The George Washington University		Bell, Edward Leroy	Ohio
Barger, John Raymond	D.C.	B.S. in M.E. 1946, Illinois Institute of Technology	
Barger, Herman H.	Mass.	Bell, Jay Richard	Utah
A.B. 1937, Harvard University		Bellamah, Frederick Joseph	D.C.
Barish, Benjamin J.	Mich.	A.B. 1949, The George Washington University	
B.S. in E.E. 1946, Illinois Institute of Technology		Bell, Osborn S.	Md.
Barnard, Richard Paul	Va.	A.B. 1943, Allegheny College	
B.S. in M.E. 1947, University of Michigan		M.S. 1947, Dartmouth College	
Barnes, Duard Roof	Ariz.	Bennet, Joseph Campbell, Jr.	Va.
A.B. 1949, The George Washington University		Bennett, Anne Rutherford	Va.
		A.B. 1939, Goucher College	
		Bennett, William Batchelder	Va.
		B.S. 1917, University of New Hampshire	
		A.M. 1946, Ph.D. 1941, Louisiana State University	

Benson, Floyd W. A.B. 1933, Stanford University	Calif.	Bissing, Melvin J. B.C.E. 1940, Cornell University	N.Y.
Benson, Jacque Marie B.S. 1947, University of Utah	Utah	LL.B. 1940, Georgetown University	
Berg, Louella Miller	D.C.	Bloch, Robert Oakleigh	Nehr.
Berg, Martin Donald	D.C.	A.B. 1940, The George Washington University	
Berger, Arthur Joseph A.B. 1948, Bucknell University	Pa.	Block, Harold Stanley B.S. in E.E. 1944, University of Missouri	Mo.
Bergman, William Hunter	D.C.	Blodgett, Norman Stack B.S. 1944, Worcester Polytechnic Institute	D.C.
Bergmann, Robert T. B.S. in E.E. 1943, University of Missouri	Md.	Bloom, Jerome Philip B.S. in M.E. 1947, Wayne University	Md.
Berman, Hyman A.B. 1949, The George Washington University	N.Y.	Blum, Daniel B.M.E. 1944, College of the City of New York	D.C.
Bernard, Eugene Louis A.B. 1949, Ohio State University	D.C.	Blumenfeld, Isadore David B.S. in E.E. 1949, Case Institute of Technology	Ohio
Berry, Jack Aloysius	Ill.	Blumenkopf, Norman A.B. 1941, Brooklyn College	N.Y.
Berry, Seymour	N.Y.	Blute, William Augustine B.S. 1947, University of Maryland	D.C.
Berson, Harold Ralph A.B. 1949, The George Washington University	Nev.	Bock, Eugene William B.S. 1949, Texas Christian University	Md.
Best, Lee James A.B. 1919, Duke University	N.C.	Bock, Robert Leray A.B. 1948, University of Kansas	Kans.
Beuchert, George Henry, Jr. B.S. in B.A. 1946, LL.B. 1948, Georgetown University	Va.	Boden, William A.B. 1949, The George Washington University	N.Y.
Bevelacqua, Charles Angelo B.S. in M.E. 1946, University of Pittsburgh	Pa.	Borod, Abraham B.S. 1941, College of the City of New York	N.Y.
Beven, Karel Herman B.S. 1943, University of Utrecht LL.M. 1948, University of Amsterdam	Md.	Bohan, John Patrick Bohan, Joseph James	Pa. Pa.
Biegel, Mark M. A.B. 1944, The George Washington University	D.C.	Bollinger, Howard Moore B. S. 1943, M. S. 1947, Massachusetts Institute of Technology	Md.
Bigelow, Robert Orville B.S. 1949, University of Maryland	Md.	M.B.A. 1948, Harvard University	
Birani, James Raymond B.F.E. 1948, Yale University	Conn.	Bookman, Irving A.B. 1940, New York University	N.J.
Birdsell, John Edmund A.B. 1945, LL.B. 1947, The George Washington University	Md.	Boorman, Robert Henry Booton, Robert Edward	D.C. Iowa
Biskin, Allen Raymond B.S. 1950, University of Maryland	Md.	Borcherting, Earl William A.B. 1949, The George Washington University	Wis.
Bixot, Hyland B.S. in M.E. 1934, University of Kentucky	Ky.	Borel, Paul Arnold B.S. in C.E. 1934, University of Kansas	Va.
Bjorklund, Otto Edward	Minn.	M.B.A. 1938, Harvard University	
Black, George LaDow B.S. in E.E. 1946, University of South Carolina	Md.	A.M. 1944, Columbia University	
Black, Richard McKeon	Ohio	Bornstein, Irwin Seymour	N.Y.
Blackwell, Albert Turner A.B. 1948, University of Maryland	Md.	Boroughs, Lewis Edward LL.B. 1948, The George Washington University	N.C.
Bladegroen, Robert John A.B. 1942, LL.B. 1947, Cornell University	N.Y.	Bottner, Jeffrey Clair Bottone, Patrick Francis	Pa. D.C.
Blake, George Francis B.S. 1947, Northeastern University	Md.	B.S. 1947, Seton Hall College	
Blake, Martin B.S. 1947, Northeastern University	D.C.	Bourdon, Edouard Docteur en Droit 1938, University of Liège	Belgium
Blakemore, James Russell B.S. 1934, University of Illinois	Mich.	Bower, Robert Sharon A.B. 1920, Stanford University	Wash.
Blanchard, Charles Fuller A.B. 1947, LL.B. 1949, Duke University	N.C.	Bowers, Arthur Lewis B.E.E. 1948, College of the City of New York	N.Y.
Blasz, James McCauley A.B. 1949, Bowdoin College	D.C.	Bowers, Edwin Ralph B.S. 1948, Virginia Military Institute	Va.
Blatchford, Walter Larned B.S. 1933, United States Naval Academy	Ill.	Bowman, Robert Tchanan A.B. 1948, Miami University	Md.

Campbell, Charles Edward B.E.E. 1949, The George Washington University	Va.	Chazin, Sheldon B.B.A. 1949, College of the City of New York	N.Y.
Campbell, Francis Walter B.S. in Ed. 1946, Rhode Island College of Education	R.I.	Chennault, Joe Young Cherwek, Stanley A.B. 1949, The George Washington University	La. Mass.
Campbell, James Joseph Campbell, Paul Calvin A.B. 1938, M.S. in Ed. 1939, Pennsylvania State College	D.C. Md.	Cheslow, Ernest B.S. in Ch.E. 1939, College of the City of New York	N.Y.
Campbell, Robert Alexander, Jr. Campo, Victor Charles A.B. 1948, The George Washington University	N.J. D.C.	Chin, Robert A.B. 1949, The George Washington University	D.C.
Cantini, Humbert John, Jr. Cantor, Bernard J. B.M.E. 1949, Cornell University	N.C. N.Y.	Chittenden, Joe Daniel, Jr. A.B. 1949, The George Washington University	D.C.
Cantwell, William James A.B. 1948, The George Washington University	N.Y.	Choate, Mary Elizabeth B.S. 1949, M.S. 1941, Oklahoma Agricultural and Mechanical College	Okla.
Carey, Patrick Francis Carlson, Randolph Adair A.B. 1948, Brown University	N.H. D.C.	Choulas, James George LL.B. 1949, The George Washington University	N.Y.
Carlson, Walter Loren B.S. 1949, University of Nebraska	Nebr.	Christeller, Norman Lee A.B. 1943, Oberlin College	D.C.
Carne, William Benton B.S. 1943, University of Tennessee	Tenn.	Christensen, Earl A.B. 1945, Montana State University	Mont.
Carpenter, Patrick Louis Carr, Robert Addison B.S. 1932, Ohio State University	Md. Calif.	Christopherson, Olaf Warren A.B. 1946, The George Washington University	Minn.
Carroll, Norman Sellman A.B. 1947, The George Washington University	Va.	Chudzik, John Stephen A.B. 1948, The George Washington University	N.Y.
Carroll, Will Herman B.S. 1946, LL.B. 1948, University of Alabama	Ala.	Church, Abiah Adelbert A.B. 1948, The George Washington University	Fla.
Carter, Harold Martin B.S. 1942, Roanoke College	Va.	Church, Frederick Lewis, Jr. B.S. in B.A. 1943, American University	Va.
Carter, Sidney B.S. in Ch.E. 1942, College of the City of New York	N.Y.	Cifelli, Armand Clark, Allen Culling A.B. 1949, The George Washington University	N.J. D.C.
Carulli, Leonard A.B. 1949, The George Washington University	Mass.	Clark, George Henry, Jr. B.S. 1949, The George Washington University	D.C.
Caruso, Lawrence Robert A.B. 1949, The George Washington University	N.J.	Clark, James Leonard Clark, John Raymond A.B. 1943, Rutgers University	Ga. N.J.
Cary, George Lee, Jr. A.B. 1949, University of Maryland	Md.	LL.B. 1949, Harvard University	
Case, Matalee Talbott A.B. 1927, A.M. 1929, Ph.D. 1931, The George Washington University	Md.	Clark, Raymond Dykes B.S. 1948, University of California at Los Angeles	D.C.
Casey, John Brendan Casey, John Joseph Caslin, James Michael Cassin, Vernon A.B. 1941, Wayne University	D.C. Pa. D.C. Mich.	Clark, William Bert Clark, William Giddings Clarke, James Brent Clarke, John Harrison Oliver B.M.E. 1943, LL.B. 1948, University of Virginia	Ga. Md. Va. Md.
Cavallo, Anthony Joseph A.B. 1947, Lafayette College	D.C.	Clayton, Christopher Sadlow Coutes, Gladys Elizabeth A.B. 1944, University of Texas	D.C. Tex.
Cavan, William Eugene A.B. 1948, Guilford College	N.C.	Coburn, William Hoffman Coffman, Dean Farrington Coffman, Robert Reid B.S. in Ch.E. 1944, Tufts College	Mont. Va. N.J.
Cavanagh, John Edward A.B. 1941, University of Oregon	Oreg.	Cochran, Robert Thuman, Jr. B.S. 1948, Georgetown University	Va.
Cerf, Fred Robert A.B. 1949, New York University	N.Y.	Coen, Benjamin Wiggins A.B. 1942, Marietta College	W Va.
Cerra, Arthur Joseph Chang, Richard I. Fong A.B. 1943, St. John's University, Shanghai	N.Y. N.Y.	Coxson, John Wesley LL.B. 1949, The George Washington University	Va.
Chapman, Frank Morris Charles Frederick Isaac Chastain, Billy Fred	D.C. Pa. D.C.		

Cohen, Donald Sidney B.S. 1947, University of Maryland	D.C.	Costa, Jasper Silva A.B. 1927, Brown University	D.C.
Cohen, Richard Edward	D.C.	LL.B. 1931, Cornell University	
Cohen, Saul Benjamin A.B. 1949, The George Washington University	D.C.	LL.M. 1948, Georgetown University	W.Va.
Coker, Joseph Daniel A.B. 1935, A.M. 1937, Ph.D. 1949, The George Washington University	S.C.	Costello, Elmer Price A.B. 1949, Marshall College	Md.
Cole, Walter Harvey, Jr. B.C.E. 1949, The George Washington University	D.C.	Cotter, Francis Aloysius LL.B. 1940, The George Washington University	Mam.
Coleman, Carl Shaughnessy	Va.	Cotter, John A.B. 1934, Yale University	D.C.
Collier, Edwin A.B. 1948, The George Washington University	N.J.	Coulombe, Raymond Armond B.M.E. 1948, The George Washington University	Conn.
Collins, Henry Dalton B.S. 1940, College of Notre Dame of Maryland	Va.	Cowles, Truman David, Jr. B.S. 1944, Franklin and Marshall College	
Colmer, James Henry	D.C.	LL.B. 1949, Catholic University of America	S.C.
Colvin, Harold Bradford	D.C.	Cox, Herman Elmer	D.C.
Compton, Ross Harrington B.S. 1947, Massachusetts Institute of Technology	Va.	Coyne, Joseph Patrick A.B. 1939, St. Ambrose College	W.Va.
Conboy, John Anthony B.S. 1948, University of Scranton	Md.	Czorny, John Czorny, Aldo John	N.Y.
Condon, Theron Edwin B.S. in M.E. 1934, Northeastern University	Md.	B.S. 1946, B.M.E. 1947, Stevens Institute of Technology	
Conner, Joseph John B.F.E. 1949, Catholic University of America	Pa.	Craddock, William Wood	Md.
Conner, Robert Joseph B.S. in B.A. 1949, University of Scranton	Pa.	Craze, John Henry	D.C.
Connor, James Robert A.B. 1939, Fairmont State College	W.Va.	Crammond, James Darwin	Md.
Conrad, Paul Rawson B.S. 1949, University of Kansas	Kans.	Crandell, William Palmer	N.M.
Cock, Rae Constance B.S. 1948, Temple University	Pa.	Crane, Esther Sibyl A.B. 1949, The George Washington University	
Coke, David Ohlmer B.S. 1941, Buffalo State Teachers College	N.Y.	Craty, Thomas Dodds	Pa.
M.S. 1942, New York State Teachers College, Albany		Creedy, William Martin A.B. 1949, Duke University	Md.
Cooley, Edwin Remick A.B. 1934, Municipal University of Wichita	Kans.	Creeger, Hugh Cassell, Jr.	Va.
Cooper, Wesley William LL.B. 1947, The George Washington University	Va.	Crews, William Penn	Md.
Cope, Harland Burleigh A.B. 1946, University of Kansas	Kans.	Cronin, G.S. Homer Ph.B. 1937, Holy Cross College	Mass.
Coppel, Arthur A.B. 1949, University of Virginia	N.Y.	Crooks, Robert Gladden B.S. 1949, M.S. 1949, Massachusetts Institute of Technology	
Connell, Lucy Paul A.B. 1949, The George Washington University	Md.	Crouch, Robert Brydson B.S. 1949, University of Idaho	Idaho
Cornwell, Richard Edwin A.B. 1946, Hampden-Sydney College	Va.	Cullen, Frank Haywood B.S. in L.L. 1949, The George Washington University	Va.
Corrigan, John Raymond A.B. 1949, University of Maryland	D.C.	Cullen, Matthew Joseph, Jr. A.B. 1946, Harvard University	D.C.
LL.B. 1942, The George Washington University		Culpepper, Robert Everett A.B. 1948, The Citadel	D.C.
Cortez, Ezekiel Canimiro, Jr. A.B. 1943, New Mexico College of Agriculture and Mechanic Arts	N.M.	Cummings, Samuel A.B. 1949, The George Washington University	D.C.
LL.B. 1948, The George Washington University		Cunningham, Dewey Junior B.M.E. 1947, University of Louisville	Va.
		Currin, John Langford A.B. 1949, The George Washington University	Va.
		Curry, John Vincent	N.Y.
		Curry, Stowers Leigh A.B. 1948, The George Washington University	Va.
		Curtis, Allen Benjamin B.Ch.E. 1943, Penn College	Ohio
		Cushman, Robert Everett, Jr. B.S. 1945, United States Naval Academy	Minn.
		Custard, Robert Franklin	Va.

D

Dacifus, Jordan Albert	Va.	Del Russo, Alessandra Luini	Md.
A.B. 1949, Harvard University		Dr. Litt. 1939, Milan State University, Italy	
Dalonas, John	D.C.	Dr. Jur. 1943, Pavia State University, Italy	
Daley, William John	Mass.	De Marr, Frederick Stanley	Md.
A.B. 1941, Tufts College		A.B. 1949, University of Maryland	
Dalton, Stanley Charles, Jr.	Md.	Dembling, Paul Gerald	N.J.
B.S. 1947, Rensselaer Polytechnic Institute		A.B. 1940, A.M. 1942, Rutgers University	
Daly, John Joseph	Va.	Dempsey, James Paul	Pa.
A.B. 1949, The George Washington University		B.S. 1943, University of Scranton	
Daniel, Neil	D.C.	M.S. 1949, Columbia University	Nev.
Daniel, William Jeffress	N.C.	Denton, Ralph Lloyd	Md.
B.Ch.E. 1947, North Carolina College at Durham		DePaul, Joseph Alfred	W.Va.
Daniels, Thomas J.	Pa.	DePond, Frank James	
Danilowicz, Pascal Joseph	Md.	A.B. 1946, West Virginia University	
B.S. 1948, Wilkes College		DeRosa, Edward Francis	Mass.
D'Antimo, Daniel	N.Y.	A.B. 1947, The George Washington University	
B.S. 1948, University of Buffalo		Derrick, Duane Greenwood	Utah
Darlin, Lewis R., Jr.	D.C.	A.B. 1948, The George Washington University	
Darsch, Earl Clement	Va.	Desha, John Rollin	Hawaii
A.B. 1941, Western Maryland College		Detling, Harold C.	Calif.
Dart, Albert Laplace	La.	Detwiler, George William	Va.
A.B. 1934, LL.B. 1937, Tulane University		B.S. 1948, Georgetown University	D.C.
David, Maurice Allen	Ind.	Deutsch, Norman	
Davies, John Rhys	D.C.	B.Ch.E. 1944, College of the City of New York	
A.B. 1946, University of North Carolina		M.Ch.E. 1948, New York University	N.Y.
Davis, Carl Clall	Okla.	Dibner, Richard Eugene	
B.S. 1943, LL.B. 1949, Oklahoma Agricultural and Mechanical College		B.M.E. 1941, College of the City of New York	
Davis, Charles Russell	Tex.	Dickmeyer, John T.	Va.
Davis, Clifford, Jr.	Tenn.	A.B. 1949, University of Massachusetts	
A.B. 1949, The George Washington University		Dickson, James Meek	Md.
Davin, John Alexander, Jr.	Calif.	Diemer, Robert Arthur	D.C.
A.B. 1927, Marshall College		Dietz, Stanley Martin	N.Y.
A.M. 1931, University of Michigan		Diffley, John Edward	Pa.
Davia, Sadye Jane	Pa.	Dillehay, Thomas Jefferson, Jr.	Tex.
A.B. 1947, The George Washington University		A.B. 1927, A.M. 1929, Baylor University	
Day, Clayton LaVera	D.C.	Di Mazon, Anthony Joseph	N.J.
B.S. 1923, C.E. 1929, Iowa State College		B.S. 1936, University of Maryland	
J.D. 1930, Drake University		D. Martino, Horace Robert	Mass.
Day, Ernest Herbert	Ohio	DiMona, Joseph Michael	N.J.
A.B. 1941, Oberlin College		A.B. 1947, Duke University	
Day, John Sanford	Va.	Dixon, Robert Galloway, Jr.	N.Y.
B.S. 1925, United States Naval Academy		A.B. 1941, Ph.D. 1947, Syracuse University	
Dea, Franklin	Calif.	Dixon, William Joseph	Md.
A.B. 1948, University of Maryland		Doane, John Emil	Md.
Deal, Laurie Joe	N.C.	B.F.E. 1946, The George Washington University	
B.S. 1944, Lenoir-Rhyne College		Dobkin, Abraham	N.Y.
Dean, Thompson	Conn.	A.B. 1948, The George Washington University	
A.B. 1916, Harvard University		Dobres, Jeanne Louise	Md.
DeBarr, John Richard	Pa.	A.B. 1929, The George Washington University	
A.B. 1947, Bucknell University		Dodd, Harold Gregory	Va.
DeBlasis, Samuel J.	Ohio	Dodge, John Parker	Md.
DeBruin, Wesley	Mich.	A.B. 1940, Johns Hopkins University	
B.S. in E.E. 1946, Illinois Institute of Technology		Doe, Norman Ross	Mass.
DeBurr, Mary Margaret	D.C.	A.B. 1948, Marshall College	
A.B. 1947, The George Washington University		Donaldson, John Eldridge, Jr.	D.C.
Delasco, Lewis	D.C.	A.B. 1949, The George Washington University	
A.B. 1948, The George Washington University		Donelson, Kenneth William	Neb.
		Donnelly, Albert Lee, Jr.	Conn.
		A.B. 1947, Yale University	

Donnelly, Henry Joseph, Jr. B.S. 1928, University of Pennsylvania	Va.	Dunning, Alice Langley A.B. 1943, Queens College	N.Y.
Donnelly, Richard Charles	D.C.	A.M. 1944, Clark University	
Donnelly, William Francis	D.C.	Dunphy, Robert Giles	R.I.
Donnelly, William James	Md.	Dunstan, Chadwick	Hawaii
Donohue, John Andrew	D.C.	Dusenbury, Richard Green	S.C.
Doolittle, Glenn Alden B.S. 1930, Southwest Texas State Teachers College	Tex.	A.B. 1946, University of South Carolina	
M.B.A. 1940, University of Texas		Dworshak, Calvin George	Idaho
Dorcasavage, William Joseph	Pa.	Dwyer, Jean Ferguson	Mass.
LL.B. 1940, Catholic University of America		A.B. 1948, The George Washington University	
Dorf, Paul Aaron	Md.	Dwyer, John Joseph	D.C.
Doris, William Matthew	N.Y.	A.B. 1947, The George Washington University	
Doub, Dorothy L.	N.C.	Dysart, Thomas Gilmore	Md.
A.B. 1941, Brenau College		B.S. in M.E. 1943, University of Missouri	
Dougherty, Frank R. A.B. 1946, The George Washington University	Md.		
Dougherty, Thomas James	N.D.		
Dougherty, Wayne J. A.B. 1941, Iowa State University	Iowa		
Dowell, Arthur Edward	D.C.	Earl, Ira Roy B.S. 1948, Brigham-Young University	Nev.
B.S. in E.E. 1943, Princeton University		Earl, Owen Ken A.B. 1948, Brigham-Young University	Idaho
Dowell, Earl Simeon B.S. 1947, University of Illinois	Ill.	Earle, John Howard B.S. 1943, Pennsylvania State College	D.C.
Downes, John P.	N.Y.	Earle, William Kehr B.S. 1940, United States Coast Guard Academy	Pa.
Downing, Leslie Burgess B.S. 1930, United States Military Academy	D.C.	Early, William Eugene	D.C.
Downs, Harold Alfred	Va.	Earman, John William, Jr.	D.C.
Doyle, William Joseph, Jr.	Md.	Earnheart, Frank Jones A.B. 1947, University of North Carolina	N.C.
Drape, Michael John	Ohio		
Dreifus, Jordan Albert A.B. 1940, Harvard University	Va.		
Dreco, George Calvin B.S. 1945, University of Alabama LL.B. 1948, The George Washington University	D.C.	Eastin, Roy B. A.B. 1948, A.M. 1949, The George Washington University	Ky.
Drimmer, Saul E. B.S. 1940, The George Washington University	N.Y.	Eberhart, Francis Claude A.B. 1940, University of Dubuque LL.B. 1948, University of Florida	Va.
Driver, William Joseph B.B.A. 1941, Niagara University	Va.	Edmondson, Francis Livingston B.Ph. 1934, Emory University	Fla.
Drysdale, Robert Morrison, Jr. A.B. 1936, Harvard University LL.B. 1940, Cleveland-Marshall Law School	Ohio	Edwards, James Edwin A.B. 1946, LL.B. 1946, The George Washington University	Fla.
Dufresne, Joseph Paul B.S. 1943, LL.B. 1948, Georgetown University	D.C.	Egger, Roscoe Lynn, Jr. B.S. 1942, Indiana University	Md.
Duft, Donald Matthew B.S. in E.E. 1940, Illinois Institute of Technology	Ill.	Egry, Paul Wesley A.B. 1946, University of California at Los Angeles	Calif.
Dugan, Michael Hugh	Va.	Ehrlich, Bernard Herbert A.B. 1946, LL.B. 1949, The George Washington University	D.C.
Dugan, Thomas Joseph B.S. 1911, Catholic University of America	Md.	Eiring, Henry William B.S. 1940, Georgetown University	Md.
Dum, Frank Bryan	Va.	Eldredge, Robert Homer A.B. 1948, Duke University	Vt.
Dumaine, Gabriel Romain A.B. 1948, The George Washington University	Va.	Elkin, Benjamin A.B. 1940, The George Washington University	Ill.
Duncan, Donald Richard A.B. 1938, Ohio State University	D.C.	Ellenberger, Kenneth Rehl LL.B. 1948, B.S. 1940, Ohio State University	Ohio
Dunn, Dorothy A.B. 1945, University of Nebraska	Nebr.	Elliott, Stephen Lyons	Md.
Dunn, George Martin A.B. 1949, The George Washington University	D.C.	Elhott, William Homer, Jr. A.B. 1940, Wesleyan University	N.J.
		Ellis, James G., Jr.	D.C.
		Ellis, Robert Kekumu A.B. 1949, Harvard University	Hawaii

Ellsworth, Charles West, Jr. B.S. 1947, University of Maryland	Md.	Ferrell, Robert Bennett Ferrill, Grace Cecelia A.B. 1948, The George Washington University	Ga. R.I.
Elstrand, John Grover A.B. 1950, Texas Christian University	D.C.	Fiddler, Robert William B.M.E. 1946, College of the City of New York	N.Y.
Elward, Elizabeth Anne A.B. 1949, Trinity College	Md.	Field, Milton Mortimer B.S. in E.E. 1948, University of Nebraska	N.Y.
Embrey, Lemuel Jackson A.B. 1937, LL.B. 1949, The George Washington University	Va.	Fields, Paul Henry, Jr. Filipek, Edward Gregory A.B. 1949, The George Washington University	Va. D.C.
Engelthaler, Fred Edward B.S. 1938, Illinois Institute of Technology	Ill.	Filippone, Frank Joseph Filippone, Joseph Stephen Finch, Walter Gilchrist B.E.E. 1940, Johns Hopkins University	Md. D.C. D.C.
Engle, Clarence Hess, Jr. A.B. 1944, University of Kansas	Kans.	Fink, Jules Yerns A.B. 1940, The George Washington University	D.C.
Enzor, Thomas Henry, Jr. Ergas, Isaac B.M.E. 1948, New York University	Va. N.Y.	Finken, John Anthony B.S. 1947, M.S. 1948, University of Wisconsin	Wis.
Eslinger, Frank Robert B.S. 1946, University of New Mexico	Va.	Finken, Warren Elroy B.S. in M.E. 1948, University of Wisconsin	D.C.
Erbington, Paul James B.S. 1949, Iowa State College	D.C.	Finley, Charles Truman Finn, John Louis B.S. 1943, LL.B. 1940, Georgetown University	Md. Pa.
Ettenger, Robert Lee B.S. 1948, University of North Carolina	D.C.	Fischer, Harry Carl A.B. 1949, The George Washington University	D.C.
Evans, Walker Williams B.S. 1939, Presbyterian College	D.C.	Fischer, John Jacob LL.D. 1912, University of Szeged, Hungary	D.C.
Evers, Herbert J. B.M.E. 1947, Cooper Union	D.C.	Fisher, Henry Arthur A.B. 1943, West Virginia University	W.Va.
Eves, Walter Curtis B.S. 1948, University of Pennsylvania	Md.	Fisher, Herbert S. Fisher, John Hannus LL.D. 1931, University of Prague	D.C. Md.
F			
Fain, Martin Robert Fair, Robert James A.B. 1947, The George Washington University	D.C. Ind.	Fisher, Myers Norman A.B. 1949, College of William and Mary	Va.
Fairbanks, Eugene Francis A.B. 1946, University of Kansas	D.C.	Fitch, Richard Walsh, Jr. A.B. 1932, Amherst College LL.B. 1940, Columbia University	Conn.
Falloon, James Hugh, Jr. A.B. 1948, The George Washington University	Nebr.	Fitzgerald, Donald Edward A.B. 1949, The George Washington University	D.C.
Fanget, Louis Alfred A.B. 1939, Rutgers University	N.J.	Fitzpatrick, Daniel Joseph B.S. 1949, Georgetown University	Mass.
Farnsworth, Carl Davis A.B. 1942, West Virginia University	W.Va.	Flanagan, Bernard Lawrence Flanagan, Winifred Winsor A.B. 1949, University of Chicago	Vt. D.C.
Farrell, Edgar Henry, Jr. Farrell, John Joseph B.S. 1946, University of South Carolina	N.Y. D.C.	Flanders, Robert Lee A.B. 1946, The George Washington University	Tex.
Fassberg, Benjamin Faubion, Urban Hart B.S. in E.E. 1948, University of Texas	Va. Tex.	Flanigan, John William A.B. 1949, Gannon College	D.C.
Faust, James Emory A.B. 1948, The George Washington University	D.C.	Flax, Louis B.S. in Ch.E. 1943, University of Maryland	D.C.
Favarella, Fiodie Paul Feldman, Melvin Martin Fender, Ross Calvin Fenichell, Melvin Medford A.B. 1943, Dartmouth College	Pa. D.C. Nebr. Va.	Fleck, Stephen Edward B.S. 1940, Thiel College	Pa.
Ferguson, Francis Joseph B.S. 1946, LL.B. 1949, Georgetown University	D.C.	Fleishman, Irving Fleming, Lester Leroy	D.C. D.C.
Ferguson, Isabel A.B. 1925, Agnes Scott College A.M. 1927, University of Chicago	N.C.		
Fern, Benjamin Richard A.B. 1943, Queens College	Va.		
Fernandez, Carlos Benito LL.D. 1943, University of Havana LL.B. 1949, University of Miami	Cuba		

Gareau, Charles Frederick B.S. in M.E. 1939, The George Washington University	Va.	Gilbert, Milton Edwin B.M.E. 1948, College of the City of New York	D.C.
Gerlock, Edward Allen, Jr. B.S. 1943, The George Washington University	Md.	Gill, Rowland Pearson A.B. 1940, Louisiana Polytechnic Institute	La.
Garrett, C. Donald B.S. 1931, Franklin and Marshall College	Va.	Gillen, Hugh Chisholm A.B. 1917, University of Wisconsin	Wis.
Garrett, Paul Weatherly A.B. 1949, The George Washington University	D.C.	Gilmore, Edward Lee A.B. 1949, West Virginia University	Va.
Garrett, Rufus Sanders, Jr. B.S. 1946, United States Military Academy	Tex.	Gilmore, Frank Peter B.S. 1927, M.D. 1929, Loyola University	Ill.
Garris, Jack John A.B. 1947, University of Michigan	Mich.	Gingell, Robert Arthur A.B. 1948, The George Washington University	Md.
Garro, Edward Joseph	Nev.	Ginsberg, Albert	N.Y.
Gates, Walter Samuel A.B. 1942, Centre College	Ky.	Gittings, Thomas Morton, Jr. Glasgow, Richard Ellsworth	Md. D.C.
Gatlin, Daniel Ray B.E. in M.E. 1946, University of South Carolina	Md.	A.B. 1948, Bradley University	Iowa
Gattoni, Joseph Alexander	Mass.	Glass, Norman Piller A.B. 1937, Oklahoma City University	
Gaudet, Richard Austin B.S. in M.E. 1947, University of Rochester	Mass.	L.L.B. 1941, University of Oklahoma	
Gaughan, John Vincent A.B. 1933, Villanova College	Va.	Glatstein, Irwin Lee B.S. 1939, A.M. 1940, University of Missouri	D.C.
Gaughan, Vincent Michael Gaus, William Carl A.B. 1949, Bucknell University	N.Y. Pa.	Glenn, Ralph Ray A.B. 1946, University of North Carolina	N.C. Pa.
Gauss, Arthur B.S. in E.E. 1933, Drexel Institute of Technology	Md.	Glowacki, John Henry B.S. 1948, Bucknell University	Conn. Alaska
Gavio, Martin Jerome A.B. 1949, Norwich University	N.J.	Goding, Maurice Wilfred A.B. 1933, Yankton College	Mass.
Geier, Fredrick Raymond B.B.A. 1948, University of Toledo	Ohio	Goewey, Bruce Anderson A.B. 1942, Colgate University	D.C.
Gelak, Bernard Andrew B.S. in E.E. 1947, Syracuse University	N.Y.	Goldenberg, Melvin Myron B.M.E. 1949, Catholic University of America	D.C. D.C.
Gelb, Joseph Donald B.S. 1950, University of Scranton	Pa.	Goldman, Alfred Merton Goldman, Samuel Zachary	
Gemza, Theodore Anthony Generelly, Richard Fleury	Conn. D.C.	A.B. 1940, The George Washington University	Mass.
Gentile, John Joseph George, Richard Bennett A.B. 1949, The George Washington University	W. Va. Va.	Goldman, Sherman H. B.S. in M.E. 1948, Northeastern University	N.Y. Md.
Gerard, Richard B.S. 1949, Kansas State College	Mo.	Goldsand, Ronald Howard Goldsborough, George Joseph, Jr.	D.C.
Gerhardt, Robert Bernard B.S. in M.E. 1947, Northwestern University	Md.	B.S. 1947, United States Military Academy	
German, John William, Jr. B.S. 1949, Rose Polytechnic Institute	Ind.	Goldstein, Benjamin B.S.S. 1941, M.B.A. 1943, College of the City of New York	N.Y.
German, Josephine Elisabeth A.B. 1948, University of Michigan	Mich.	Golitz, Bernard Kenneth B.S.S. 1941, M.S. in Ed. 1942, College of the City of New York	D.C.
Germas, Demosthenes James Giangreco, Angelo Andrew	Va. D.C.	Goodman, Marie Cleckner A.B. 1945, College of Notre Dame of Maryland	
Gibbs, Robert Stewart Gibson, John Murray B.S. 1934, Washington and Jefferson College	N.Y. Md.	B.S. in L.S. 1947, Western Reserve University	D.C.
Gibson, Rankin MacDougal L.L.B. 1939, University of Missouri	Mo.	Goodman, Thomas A. B.S. 1937, Buffalo State Teachers College	
B.S.L. 1948, St. Paul College of Law		A.M. 1910, Columbia University	Va.
Gifford, Yale Wesley A.B. 1948, The George Washington University	Kans.	Gordon, Albert B.M.E. 1944, College of the City of New York	Va. Ind.
		Gordon, Francis Guthrie, Jr. Gordon, Herbert Stephan A.B. 1947, Indiana University	

Happick, Richard Jay B.M.E. 1948, Syracuse University	N.Y.	Heeney, Elizabeth Anne A.B. 1946, Montclair State Teachers College	D.C.
Harbaugh, George Harold A.B. 1948, Rutgers University	D.C.	Hellmuth, James Grant B.S. 1948, Yale University	D.C.
Harbison, Earle Harrison, Jr. A.B. 1948, Washington University	Mo.	Hellstrom, Ralph Edwin A.B. 1945, Augustana College	Ill.
Hardin, Dale Wayne A.B. 1949, The George Washington University	Ill.	Helvenston, Edward Gary A.B. 1933, LL.B. 1938, Harvard University	Va.
Hargy, Francis Robert A.B. 1948, The George Washington University	Md.	Helzer, Charles William B.S. 1945, Georgia Institute of Technology	Fla.
Harloff, William Carroll	Md.	Hemmina, John Buster B.S. in Comm. 1949, University of Virginia	W.Va.
Harmon, Robert Brooks B.S. 1941, University of Maryland	Md.	Hendershott, Susan Jane	Md.
Harper, Richard Howard	Iowa	Hendrick, Charles Edward B.S. 1949, University of Maryland	Pa.
Harris, Richard Carl B.S. 1947, Iowa State College	D.C.	Hennessy, Charles Edward	Md.
Harrison, Byron Edward	Md.	Henretta, David Howard	W.Va.
Harrison, Raymond William B.S. 1949, University of Maryland	W.Va.	Henry, Edwin Stanton, Jr.	D.C.
Harshbarger, Sam Ross A.B. 1949, West Virginia University	S.D.	Henry, Raymond Charles A.B. 1949, State University of Iowa	Iowa
Hart, Seward Lyman A.B. 1938, Yankton College	Calif.	Henson, Edwin Nott, Jr. A.B. 1948, The George Washington University	D.C.
Hartman, Charles Clifford, Jr.	D.C.	Herman, Jack Robert A.B. 1943, The George Washington University	Va.
Harvey, Robert Henry A.B. 1948, The George Washington University	Mass.	Herman, Russell Royden A.B. 1949, Washington State College	Alaska
Haskell, Boris A.B. 1944, Harvard University	Calif.	Herrick, Harold Colton, Jr. B.S. 1947, Washington University	Mo.
Haskell, James K. B.S. 1949, The George Washington University	Pa.	Heslop, Robert Ierrott A.B. 1948, New York University	N.Y.
Hatch, Albert Haig A.B. 1947, University of Pennsylvania	W.Va.	Hetzler, William Joseph B.S. 1948, Georgetown University	Md.
LL.B. 1933, Temple University	D.C.	Hewlett, Glenn Howard	Ill.
Hatfield, William Adair A.B. 1947, West Virginia University	Ind.	Hiers, Jasper Theodore	N.C.
Hattis, Russell Elmer B.S. in E.E. 1947, University of Illinois	Wash.	Hiestand, Dale Melvin A.B. 1949, Mount Union College	Ohio
Hauck, William McRae	Md.	Hildreth, Richard	D.C.
Haug, Irving Mansson A.B. 1948, University of Washington	Iowa	Hill, Joseph Andrew A.B. 1949, Lynchburg College	Va.
Hawk, Gordon Leigh A.B. 1948, American University	N.Y.	Hill, Joseph Carl B.S. in B.A. 1949, Mount St. Mary's College	Md.
Hayek, Will J.	Va.	Hill, Richard Edwin B.S. 1949, Virginia Military Institute	Va.
Hayes, Robert William A.B. 1939, Columbia University	D.C.	Hill, Richard Work	Va.
Hayley, Basil A.B. 1948, The George Washington University	Ark.	Hill, William Bethel, Jr. B.S. 1941, University of Virginia	D.C.
Haynes, Alton Myles, Jr. A.B. 1949, University of North Carolina	Miss.	Hillard, Benjamin Clark A.B. 1948, West Virginia University	Wis.
Hays, Marion Steele A.B. 1948, University of Arkansas	D.C.	Hillier, Floyd William B.S. 1948, Michigan State College	D.C.
Hays, Ralph Emerson, Jr. A.B. 1949, Millsaps College	D.C.	Hillman, Jack Allan	D.C.
Healey, Alan John A.B. 1948, The George Washington University	Md.	Himelfarb, Jordan Sheldon	N.Y.
Hearn, Alexander McMurray	D.C.	Hines, Emmett Womack B.S. in M.E. 1946, Cornell University	
Hebele, Harold William A.B. 1949, Roosevelt College	Md.	M.B.A. 1948, Columbia University	Md.
Hecht, Irving Mark B.E.E. 1947, College of the City of New York	Ill.	Hintze, William B.E.E. 1949, The George Washington University	
Hedley, Robert Kenneth		Hirsch, Robert Bruce Hise, James Cletis A.B. 1948, University of Illinois	D.C.

Hise, William Curtis A.B. 1948, A.M. 1949, University of Illinois	Ill.	Hopper, Nathaniel Wilson Horne, Joe Louis B.S. 1941, United States Coast Guard Academy	Md. D.C.
Hiss, Alfred Lee	W.Va.	Horne, Leon Russell B.S. 1941, Northeastern University	Mo.
Hix, Ernest Theodore B.M.E. 1949, The George Washington University	Va.	Horsky, Eugene Gregory B.S. 1948, B.C.F. 1949, Rensselaer Polytechnic Institute	N.Y.
Hobbes, Alan Buxton A.B. 1930, Washington and Lee University	Fla.	Horton, Donald Raymond B.S. 1948, Valley City State Teachers College, N.D.	N.D.
LL.B. 1947, The George Washington University		Horton, Marvin Vale, Jr. B.S. 1948, University of North Carolina	N.C.
Hodges, Quinton Edward B.S. 1915, University of Georgia M.S. 1917, John B. Stetson University	Ga.	Horvath, John George B.S. 1940, University of Denver	Md.
Hodges, Willard Jefferson, Jr. LL.B. 1947, University of Alabama	Ala.	Horwitz, Harold B.S. 1941, The Citadel	N.Y. S.C.
Hoeber, Bruce Reginald B.S. 1946, United States Naval Academy	N.Y.	Houseal, Robert Wright, Jr. B.S. 1941, The Citadel	D.C.
Hoefer, Frederick Adam Carl J.D. 1941, University of Berlin, Germany LL.M. 1941, Harvard University	Va.	Houston, James Knox Howland, Harold Howard, Jr. A.B. 1947, The George Washington University	Mass.
Hoernig, Kurt H. Hoffman, Robert Douglas Hogan, Marjorie Bell A.B. 1942, Shorter College	Germany D.C. Md.	Hort, John G. B.S. 1943, United States Military Academy	D.C.
Holbrook, Ollie James Holcomb, William Collis A.B. 1947, The George Washington University	Ky. Ala.	Hubbard, Russell Hale, Jr. B.S. in E.E. 1944, Syracuse University	Conn.
Holzman, Frank Joseph A.B. 1940, Muhlenberg College	Pa.	Hudgins, John Jefferson LL.B. 1940, The George Washington University	D.C.
Holeman, William Daniel Holford, Bond Larry Holland, Morton B.S. in E.E. 1947, Cornell University	Tenn. Md. N.Y.	Hudson, Dugald Walker B.S. 1940, Presbyterian College LL.B. 1949, The George Washington University	S.C. 8 C.
Holley, Max Vinson B.S. 1939, The George Washington University	Va.	Hughes, Harry Roe B.S. 1940, University of Maryland	Md.
Hollingsworth, Gerald Eugene Hollingsworth, William Leon A.B. 1940, The George Washington University	D.C. Miss.	Hughes, Michael Vincent Hull, Maury Isaac A.B. 1942, Southwestern University A.M. 1946, The George Washington University	N.Y. Tenn.
Hollis, James George B.S. 1948, American University	Md.	Hulvey, Charles Newton, Jr. B.S. 1926, University of Virginia	Va.
Holtzman, Frank Joseph A.B. 1949, Muhlenberg College	Pa.	Humes, Theodore Leon A.B. 1948, University of Pittsburgh	Va.
Holt, Edward Brewster B.S. 1947, University of Michigan	Ill.	Hundley, Henry Robert Hunter, Donald Varnsdal, Jr.	W.Va. Md.
Holt, Felix Thomas A.B. 1949, American University	Okla.	Hunter, Millard Stanton B.S. 1948, University of North Carolina	N.C.
Holt, George P. A.B. 1947, University of Hawaii	Hawaii	Hurley, John James A.B. 1948, The George Washington University	D.C.
Holtzman, Irving A.B. 1941, Brooklyn College	D.C.	Hurley, Wilson Patrick B.S. 1943, United States Military Academy	N.M.
Honabach, Elmer Wilson Hood, Louis, Jr. A.B. 1948, Amherst College	Va. Md.	Hurson, James Vincent B.S. 1948, American University	Md.
Hoof, Robert Hunter B.S. 1942, Davidson College	N.C.	Hurst, Carl Wilson, Jr. A.B. 1949, The George Washington University	Tenn.
Hopkes, Townsend Walter A.B. 1944, Yale University	N.Y.	Hurt, Mary Tex A.B. 1949, The George Washington University	Ala.
Hope, Robert Allison A.B. 1921, Presbyterian College	D.C.	Hurwitz, Harlan Earl A.B. 1949, The George Washington University	D.C.
Hope, Robert Stocks Hopkins, George Mathews Marks B.S. in Ch.E. 1944, Alabama Polytechnic Institute LL.B. 1949, University of Alabama	Va. Ala.		
Hoppe, Louis William B.S. 1949, University of Illinois	Va.		

Hussar, Edward John A.B. 1946, The George Washington University	Ill.	Jaskiewicz, Edmund Michael B.S.E. 1947, University of Connecticut	Conn.
Hutchinson, Alan Stanton B.S. 1948, St. Martin College	D.C.	Jaskiewicz, Joseph Francis A.B. 1949, The George Washington University	Pa.
Hutchinson, Eileen Marie	D.C.	Jaskot, John Joseph	Pa.
Hutchinson, George Edward	D.C.	Jeffers, Albert Lavern	Ind.
Hutchinson, Herbert Malcolm A.B. 1948, Duke University	N.J.	Jeffries, Albert Carmie	D.C.
A.M. 1950, The George Washington University		Jeffries, Ardith Elaine	D.C.
Hutchinson, William David A.B. 1949, University of Maryland	Va.	A.B. 1949, Mary Washington College	Iowa
Hutson, Harrison Darden	La.	Jenkel, Albert Arthur	Iowa
A.B. 1948, Southeastern Louisiana College		Jenkel, Martin John, Jr.	Va.
Hyde, Edward Richard B.S. in E.E. 1948, Purdue University	N.Y.	Jennings, Barnard Fulton	Wyo.
Hymowitz, Helen	D.C.	B.S. 1948, University of Virginia	
		Jensen, Willis John	Md.
I		B.S. 1947, Pennsylvania State College	Okla.
Ikegami, David Takeshi	Hawaii	Jernberg, Dale Leonard	Md.
A.B. 1949, The George Washington University		Jeter, William Tyron	Okla.
Imrie, Walter Curtis B.S. 1946, Rhode Island State College	Va.	Jewett, John Stanford	Md.
A.M. 1949, American University		B.S. 1948, Georgetown University	W.Va.
Irons, Edward Sterling B.S. 1942, J.D. 1947, University of Illinois		Jividen, Randolph Lane	S.D.
Irvine, Eleanor Hood A.B. 1937, Cornell University		Johnson, Donald Lewis	
Isaac, Isaac A.B. 1949, The George Washington University		B.S. in Ch.E. 1947, Purdue University	Minn.
Isom, Clifford Clinton B.S. 1939, Kansas State College		A.B. 1948, The George Washington University	Ala.
		Johnson, Marion Meek	
J		A.B. 1939, University of Alabama	Md.
Jackson, Frank Holbrook B.S. 1938, University of Maryland		Johnson, Norton Steele	N.M.
Jackson, Philip Grant	D.C.	Johnson, Paul Douglas	
Jackson, Thomas Lester	D.C.	B.S. 1943, University of Southern California	Ala.
Jacob, John Brevard	N.Y.	Johnson, Ray Carl	
Jacobi, George Rudolph A.B. 1948, Gettysburg College		B.S. 1937, LL.B. 1939, University of Alabama	
Jacobs, Morton C. B.S. 1943, College of the City of New York	D.C.	LL.M. 1942, The George Washington University	Md.
Jacobson, Odd Thomas A.B. 1948, The George Washington University	D.C.	Johnson, Richard Carl	D.C.
Jacobstein, Harold B.S. in Ed. 1940, Indiana State Teachers College, Pa.		Jones, Calvin Clark	D.C.
Jaechel, Georgie Marion A.B. 1948, Florida State University	Md.	Jones, Cullen Bryant	D.C.
Jamgochian, Hagop Herach A.B. 1949, Clark University		A.B. 1948, The George Washington University	Tes.
Janson, Lars Edward A.B. 1948, The George Washington University		Jones, Darrell Lloyd	Va.
Jarcho, Harold George B.S. in E.E. 1940, Rhode Island State College		Jones, Doris Joanne	N.C.
Jarema, Frank Gerald		Jones, Everett Craig, Jr.	Va.
Jarvis, Albie Joseph		Jones, James Frederick	D.C.
Jasch, Verlin Elmer A.B. 1949, The George Washington University		Jones, James Mitchell	Okla.
		Jones, Jack Clayton	
		B.S. in Ch.E. 1930, Oklahoma Agricultural and Mechanical College	D.C.
		Jordan, George Sanford	D.C.
		Jovanovich, George Stephan	
		LL.B. 1933, University of Belgrade, Yugoslavia	Nov.
		Joy, Robert Alvin	
		A.B. 1940, University of Nevada	Oron.
		Julien, Carl Alden	
		B.S. 1945, University of Washington	
		M.S. 1947, University of Notre Dame	
		K	
		Kaczmar, William	Pa.
		A.B. 1940, The George Washington University	
		Kahn, Fritz Reiner	Md.
		A.B. 1948, The George Washington University	
		Kaiser, Stanley M.	D.C.

Kait, Harry Carl B.S. 1928, Temple University LL.B. 1938, University of Newark LL.M. 1949, The George Washington University	N.J.	Kelly, Francis Keith A.B. 1948, The George Washington University	D.C.
Kalb, Vernon Frederic B.S. 1947, University of Kentucky	Ky.	Kelly, John Leo B.S. 1947, The George Washington University	Md.
Kalfus, Ira Kalvin, Paul Craig A.B. 1948, The George Washington University	D.C. D.C.	Kemer, Frank Conrad A.B. 1940, The George Washington University	Md.
Kamm, Arthur Thorpe A.B. 1948, American University	D.C.	Kemp, William George A.B. 1940, The George Washington University	Md.
Kanemoto, Shigetō A.B. 1949, University of Hawaii	Hawaii	Kenkel, John Bonaventure A.B. 1949, Colgate University	Md.
Kaplan, Harold Irving B.S. 1943, University of Maine LL.B. 1948, Harvard University	D.C.	Kennedy, Harold Grant Kennedy, Joseph Bernard, Jr. A.B. 1947, LL.B. 1949, The George Washington University	Tex. Va.
Kaplan, Louis Charles A.B. 1934, Yale University LL.B. 1946, LL.M. 1948, Georgetown University	Md.	Kennedy, Oliver Kent, Arthur Peter B.S. 1941, The George Washington University	D.C. Va.
Kaplan, Marvin A.B. 1946, University of Michigan	MD.	Kent, Perrin Aloysius A.B. 1941, The George Washington University	Mo.
Kappler, Charles Theodore A.B. 1942, Yale University	D.C.	Kerr, Richard Haller A.B. 1948, West Virginia University	W.Va.
Kardon, Alexander Thomas B.S. 1935, College of the City of New York	N.Y.	Kerr, Thomas Moore, Jr. A.B. 1948, Lafayette College	N.J.
Kardv, Leonard Thomas LL.B. 1940, The George Washington University	D.C.	Kiesel, Walter, Jr. A.B. 1941, University of Nebraska LL.B. 1944, Yale University	Nebr.
Karlens, Michael Matthew A.B. 1939, University of Rochester	N.Y.	Kilburne, Richard Francis A.B. 1948, The George Washington University	Va.
Karsted, Jessie Walton Kator, Irving A.B. 1941, University of Michigan	Fla. N.Y.	Killinsworth, Ted Eugene, Jr. B.M.E. 1949, Clemson College LL.B. 1940, University of Utah	Vt.
Katz, Murray B.Ch.E. 1947, College of the City of New York	N.Y.	King, Arthur Carl B.S. 1940, Georgetown University	Conn.
Kaufman, Rae Ann A.B. 1950, Texas State College for Women	Tex.	King, Glenn Richard A.B. 1948, Gettysburg College	Md.
Kawahara, Thomas Tomokazu A.B. 1940, University of California LL.B. 1945, DePaul University	Hawaii	King, Ruth Evelyn B.S. 1933, LL.B. 1935, University of South Dakota	Ohio
Kayson, David Keasney, William Robert Keaveney, Donald Charles B.S. 1943, Bowdoin College	D.C. N.J. Mass.	Kinney, David Bowen A.B. 1949, Alma College	Va.
Keener, Wayne Merz B.S. 1940, Georgetown University	Pa.	Kinsel, James Nolan B.S. 1943, University of Maryland	D.C.
Kekub, Nicholas Keller, William Vincent B.S. 1949, Tufts College	Pa. Mass.	Kinzer, James Brooks B.S. 1948, Pennsylvania State College	Pa.
Kelley, David Philip B.S. in E.E. 1949, Lehigh University	D.C.	Kip, Rulof Frederic, Jr. B.S.E. 1949, Princeton University	N.J.
Kelley, Frank William Kelley, Wallace Ralph A.B. 1948, American University	Mich. D.C.	Kirby, Edward Francis, Jr. Ph.B. 1947, Providence College	Conn.
Kellison, John Ray B.S. in B.A. 1941, University of Richmond	Va.	Kirby, Ernest Calvin Kirk, Charles Gilbert A.B. 1911, University of Washington	Va. Wash.
Kelly, Catherine Burton A.B. 1919, Smith College	Md.	Kirkman, Albert Gwinn, Sr. B.S. 1937, Virginia Polytechnic Institute	Md.
Kelly, Dee J. Kelly, Edward Joseph B.S. 1939, Drexel Institute of Technology	D.C. Pa.	Kirsch, Martin Joseph Kirkbaum, Annie B.S. 1947, University of Maryland	D.C. D.C. Mass.
Kelly, Edward Thomas Kelly, Frances Anne A.B. 1944, University of Chicago	Ill. Va.	Kitts, Willard Frederick A.B. 1943, Amherst College	N.J.
		Kivitz, Murray Abraham B.S. 1940, New York University	Md.
		Klavan, Stanley Klippel, Mary Jane A.B. 1946, The George Washington University	Colo.

Klitzman, Maurice H.	D.C.	L	
B.S. in M.E. 1948, Purdue University			
Klostermann, Wolfgang Ekart	Ill.	Labanski, Stephen Bronislaw	Mo.
Kniazer, Igor Alexs	D.C.	Lalbin, Edward John	Calif.
B.S. 1947, Georgetown University		Lazutker, Robert Bosco	Mass.
Knight, Herbert Vincent	Md.	Lecomarino, Paul Donald	Ill.
Knoopp, Edna	N.Y.	A.B. 1948, State University of Iowa	
A.B. 1943, Brooklyn College		LL.B. 1949, The George Washington University	
Knowles, Myles Henry	D.C.	Lamof, Robert Ivan	Va.
A.B. 1949, Michigan State College		B.S. 1939, North Carolina State Teachers College	
Koblantz, Charles	Md.	La Lande, Allen Lee	Tex.
Kodless, Frederick Henry	D.C.	Lally, Paul Thomas	Pa.
B.S. in M.E. 1943, University of Maryland		Lalush, Basil	D.C.
Kokulis, Paul Nicholas	N.H.	B.E.E. 1949, Catholic University of America	
B.S. 1944, Worcester Polytechnic Institute		Landing Miranda, Jorge Luis	Puerto Rico
Kolodny, Joseph George	D.C.	A.B. 1949, Florida Southern College	
A.B. 1915, Harvard University		Landis, Harry Campbell	Md.
Konick, Bernard	N.Y.	Lane, Munson Harmon, Jr.	Va.
B.S. 1948, Brooklyn College		B.S. 1948, Emory and Henry College	
Konold, William George	Ohio	Lang, Edward Alexander	Fla.
B.E.E. 1949, Cornell University		B.S. in B.A. 1943, University of Florida	
Koonts, Robert Henry	N.C.	Laupenbeck, Earl Henry	Md.
B.S. 1949, University of North Carolina		B.S. in C.E. 1944, University of Missouri	
Kopek, John Longin	N.Y.	Langer, George Edward	N.Y.
Kuplas, Allen Atlas	D.C.	A.B. 1948, Union College	
Kupp, Paul Joseph	Va.	Lapham, George Sealy	Ga.
A.B. 1942, Lehigh University		Lapin, Earl M.	N.Y.
A.M. 1941, Duke University		Lapin, John Eldridge	D.C.
Korn, Seymour	N.Y.	Larimore, Theodore Russell	Md.
Kornblatt, Julius	N.Y.	B.S. 1928, Indiana University	
Kostew, Albert Anthony	N.Y.	M.S. 1931, University of Illinois	
A.B. 1949, Western State College of Colorado	Ohio	Ph.D. 1945, University of Nebraska	
Kostik, Peter James		Lasley, Donald Gray	D.C.
A.B. 1949, The George Washington University		A.B. 1949, Duke University	
Koutoulakos, Louis	Va.	Latham, Leslie Wade	Va.
A.B. 1949, The George Washington University		A.B. 1947, Miami University	
Koutandreas, Peter Dionysius	D.C.	A.M. 1949, University of Cincinnati	R.I.
B.C.E. 1948, The George Washington University		Latt, Benjamin	
Kozel, Alexander	Pa.	A.B. 1948, Brown University	W.Va.
Kozlowski, Joseph John	Ill.	Lattimer, Patricia Ann	
Kraft, Lester	Md.	A.B. 1947, West Virginia University	
A.B. 1948, University of Maryland		Lau, Stanley Yang Chin	Hawai
Kreek, Louis Francis, Jr.	D.C.	Laubler, John Gregory, Jr.	Kans.
B.S. 1947, Massachusetts Institute of Technology		Laubman, Richard Thomas	N.Y.
Krist, Fred George	N.Y.	B.S. in C.E. 1949, University of Notre Dame	
Krol, Casimir Thaddeus	Va.	Lavine, Irvin Arthur	Va.
A.B. 1947, St. John's College		B.A.E. 1947, Catholic University of America	
Kuonler, Ralph Rudolph	D.C.	Lawrence, Derek Peter	N.Y.
A.B. 1948, LL.B. 1949, The George Washington University		B.M.E. 1948, Clarkson College of Technology	
Kudysh, Morton	N.Y.	Leach, Daniel Joshua	Minn.
Kulla, A. Lincoln Acker	D.C.	B.S.F. 1948, University of Minnesota	
Kune, Bernard Jack	D.C.	M.F. 1946, Yale University	
Kunz, Karl Michael	R.I.	Leach, Frank Clay, Jr.	Ky.
Ph.B. 1941, Providence College		B.S. in M.E. 1947, University of Kentucky	
LL.B. 1947, Georgetown University		Leader, John Louis	N.Y.
Kurimoto, Ayako Ann	Calif.	B.S. 1949, Canisius College	
A.B. 1948, University of Washington		LL.B. 1949, Georgetown University	
Kurz, Philip Elledge	D.C.	Learman, John Frank	Mish.
B.S. 1947, University of Maryland		B.S.F. 1949, Michigan State College	
Kytile, Stuart Frederick	Md.	Leary, James Edward	Ark.
A.B. 1948, The George Washington University		A.B. 1948, Duke University	N.Y.
		Leary, Robert George	La
		LeBlanc, Joseph Lenol	

Lee, Raymond B.S. in L.E. 1948, Pennsylvania State College	N.Y.	Lindberg, Dale Sheldon A.B. 1943, Bucknell University	Pa.
Leikowitz, Saul B.S.S. 1940, College of the City of New York	N.Y.	Lindley, Thomas Madison Line, Lucille	Ariz. Mont.
Legum, Howard Isadore A.B. 1941, Harvard University	Va.	Linhol, Eric A.B. 1940, Montana State University	D.C.
Lehnert, Robert Conrad	N.Y.	Lippitt, Raymond Franklin B.M.E. 1949, The George Washington University	D.C.
Leimbach, Dorothy Gadbois A.B. 1945, Brown University	D.C.	Lippitt, Thomas Perry Lipsky, Harold	D.C. N.Y.
Leimbach, Leonard LaSalle A.B. 1946, Brown University	D.C.	Lissauer, Nanette Elisabeth Doctorate in Law 1948, Leiden University, Netherlands	Netherlands
Li, B. 1948, The George Washington University		Litke, Arthur Ludwig B.S. 1944, Trinity College	Conn.
LePore, William August Lerner, Theodore Nathan	W.Va. D.C.	M.B.A. 1947, University of Penn- sylvania	
Lessak, Gerald H.	N.Y.	Littman, Simon L.L.B. 1941, University of Maryland	D.C.
Lester, Edwin B.E.E. 1949, Rensselaer Polytechnic Institute	D.C.	Lockhart, Elizabeth Berkeley A.B. 1927, College of William and Mary	Va.
Levin, Jacob Solomon L.L.B. 1940, The George Washington University	D.C.	Lohm, Thomas Alexander A.B. 1949, The George Washington University	Md.
Levin, Joseph L.L.B. 1940, The George Washington University	D.C.	Lokke, Bernard Mohrhaux Lomas, Leonard Luther, Jr.	N.Y. Va.
Leyin, Mark B.S. in Ch.E. 1948, Princeton University	Ill.	B.S. 1947, Virginia Military Institute	N.Y.
Levine, Alfred Bernard B.S. in E.E. 1946, Cornell University	N.Y.	London, John Monte A.B. 1941, Harvard University	N.Y.
M.E.E. 1949, Rensselaer Polytechnic Institute		Long, Henry Cecil Long, George Edward	Okla. D.C.
Levine, Carl Ralph B.S. 1936, M.S. 1938, University of Michigan	Mich.	L.L.B. 1949, The George Washington University	
Levine, Grace Flax Levine, Irving	N.Y. Md.	Long, William Francis Edward A.B. 1946, A.M. 1947, The George Washington University	D.C.
Levine, Irving Seth B.S. 1941, M.S. 1941, Massachusetts Institute of Technology	N.Y.	Loomis, Jerome Lathrop B.S. in Ed. 1936, Whitewater College A.M. 1942, Northwestern University	Wis.
Levinson, Lawrence Stanley B.S. 1948, Rutgers University	N.Y.	Lopez, Concho Oral A.B. 1947, State University of Iowa	Md.
A.M. 1949, Columbia University		Loren, Phyllis C. Lusk, Herold Homer	Conn. Ind.
Levy, Donald B.S. 1947, University of Maryland	D.C.	A.B. 1949, Hanover College	
Levy, Harry B.M.E. 1936, New York University	N.J.	Lott, Fred Eli A.B. 1947, A.M. 1948, Syracuse University	N.Y.
M.S. 1946, Stevens Institute of Technology		Louk, Ralph Glyn Lowe, James William	Va. Pa.
Lewis, Arnold Charles B.S.S. 1939, College of the City of New York	N.Y.	Lowe, Ira Melvin L.L.B. 1948, The George Washington University	Mass.
Lewis, George Allan A.B. 1950, Wilkes College	Pa.	Lowman, David Daniel A.B. 1949, Stanford University	Wash.
Lewis, Harry Frank A.B. 1940, West Virginia University	W.Va.	Loy, John Irving A.B. 1942, University of California at Los Angeles	Calif.
Lhamon, George Marion B.S. 1919, United States Naval Academy	Calif.	Loya, Maria Lucia Dr. in Law 1940, University of Havana	Cuba
J.D. 1940, The George Washington University		Lucas, Charles William Luck, William Bryant	Va. Va.
L'Honniedieu, Samuel Joseph, Jr. B.S. 1940, University of Maryland	D.C.	A.B. 1948, University of Richmond	
Light, E. Jerry B.S. in E.E. 1946, Columbia University	Pa.	Lukens, Frederick A.B. 1947, University of Idaho	Idaho
Liken, Robert Lee Lillemquist, L. Blaine	Okla. Idaho	Lund, Theodore J. B.M.E. 1948, College of the City of New York	N.Y.
B.S. 1948, University of Idaho			
Lindamood, Joseph Gassani, Jr. A.B. 1943, University of Maryland	Md.		

Lund, Van Metre	Iowa	Manning, Glenn Franklin	Als.
B.S. 1944, Iowa State College		LL.B. 1948, University of Alabama	
Lund, Wilbur Herman	Minn.	Marling, Charles A.	D.C.
A.B. 1938, Gustavus Adolphus College		A.B. 1930, Pennsylvania State College	
A.M. 1942, University of Minnesota		M.S. 1949, Columbia University	Calif.
Lundgren, Henry Willard	Wash.	Margaritis, Nicholas John	D.C.
Lundquist, George Arthur	Md.	Margolis, Joel	
B.S. 1948, University of Maryland		B.S. 1948, University of Maryland	Puerto Rico
Lundy, Julian Percy	D.C.	Mari-Bras, Juan	
A.B. 1949, The George Washington University		A.B. 1949, Florida Southern College	N.C.
Lung, Ernest Hezekiah	D.C.	Markham, Charles Buchanan	
B.S. 1938, University of Maryland		A.B. 1945, Duke University	D.C.
Luther, Elmer Eugene	Mo.	Markovich, Mike	
A.B. 1949, The George Washington University		B.S. 1949, Georgetown University	N.J.
Lutz, Charles Lester	Tenn.	Markowitz, Irving	Md.
A.B. 1941, University of Louisville		Marks, Solomon	
LL.B. 1948, Vanderbilt University		B.S. in Ed. 1937, College of the City of New York	N.Y.
Lyda, James Claude H.	D.C.	Marmor, Alfred Charles	W.Va.
A.B. 1948, The George Washington University		Marshall, Charles Lance, Jr.	
Lynch, John William	Md.	B.S. in E.E. 1949, Purdue University	Va.
Lynch, William Charles	Va.	Martin, Daniel Walter	Md.
		Martin, Harry Robert	
		A.B. 1949, University of Puerto Rico	
		Martin, Leyland Myers	Md.
		B.S. 1934, University of Arkansas	
		Martin, Luther Nunemaker	Pa.
		B.S. 1940, University of Missouri	
		Martin, Marshall Alden, Jr.	Va.
		Martin, Richard Alton	Ohio
		Martin, Robert William, Jr.	Mo.
		A.B. 1949, Southwest Missouri State Teachers College	
		Martin, Thomas Archie	Ill.
		A.B. 1949, The George Washington University	
		Martin, Watt Nicholas	Va.
		Martin, Wayne Francis	Va.
		Martini, Anthony Francis	Pa.
		A.B. 1948, The George Washington University	
		Marvey, Adolph Louis	Va.
		Mashburn, Thomas Vincent	Ala.
		B.S. 1947, University of Alabama	
		Mason, William Bullard	D.C.
		A.B. 1949, Dartmouth College	
		Mates, Edward I.	N.Y.
		A.B. 1939, Brooklyn College	
		Mathias, Richard Bingham	D.C.
		Mathis, William Lowrey	Tenn.
		B.S. in M.E. 1947, Duke University	
		Mattern, Roy Edwin, Jr.	Mich.
		B.S. in M.E. 1942, LL.B. 1948, University of Michigan	
		Matthews, Jack Kean	Ind.
		B.S. 1940, Rose Polytechnic Institute	
		Mattson, Arthur Richard	D.C.
		Matusec, Frank	Pa.
		Maurer, George Joseph	Pa.
		May, Thomas James	D.C.
		A.B. 1949, The George Washington University	
		Mayberry, Lawrence Edgar	Md.
		Mayer, Robert Charles	D.C.
		B.S. 1948, Georgetown University	
		Mayes, Basil Lamar	Calif.
		Maxalewski, Raymond Adam	Wis.
		Ph.B. 1938, LL.B. 1941, Marquette University	
		Mazza, Louis Francis	Va.
		McPride, Willard C.	D.C.
		B.S. 1948, University of Maryland	

M

Machita, John	N.J.
A.B. 1948, The George Washington University	
Mack, James Edward	Fla.
A.B. 1941, The George Washington University	
Mack, John Halford	Md.
B.S. 1937, University of New Hampshire	
Mackey, Leonard Bruce	N.Y.
B.E.E. 1945, Rensselaer Polytechnic Institute	
MacMillan, John Howard	Md.
LL.B. 1949, The George Washington University	
MacNichol, Layton Frank	D.C.
A.B. 1942, The George Washington University	
MacRae, Duncan Shaw	D.C.
MacSporran, John Samuel	Va.
A.B. 1949, Yale University	
Mahar, Daniel John	N.Y.
Maher, Francis Patrick	Tex.
Maher, John Francis	N.H.
A.B. 1948, University of New Hampshire	
Maki, Walfred Victor	Minn.
Malecki, Robert Joseph	Va.
B.S. 1943, Central State Teachers College, Wis.	
Malinchak, Nicholas	Pa.
A.B. 1949, University of Pittsburgh	
Malone, William Grady	Va.
B.S. 1941, Louisiana State University	
Maltman, William Leneave	D.C.
B.S. 1941, University of Oregon	
Mamish, Julia	W.Va.
Mann, Donegan	D.C.
A.B. 1947, The George Washington University	
Mann, Robert Urban	D.C.
A.B. 1949, The George Washington University	
Manning, Charles Madison	Ky.
A.B. 1947, Union College	

McBurnett, Ros David, Jr. B.S. in E.E. 1944, Georgia Institute of Technology	Tenn.	McKinley, Royce Baldwin A.B. 1943, University of Michigan LL.B. 1948, Harvard University	Md. Va.
McCarthy, Daniel Francis B.S. 1916, University of New Hampshire	N.H.	McLaughlin, William Francis A.B. 1941, Swarthmore College	Va.
McCarthy, Mary Ellen A.B. 1947, Duke University	D.C.	McLaurin, Lillian Catherine A.B. 1917, LL.B. 1939, Vanderbilt University	Miss.
McCarty, Charles Dennis B.S. in M.E. 1941, Northeastern University	D.C.	B.S. in L.S. 1941, George Peabody College for Teachers	N.C.
LL.B. 1948, Boston University	D.C.	McLean, Charles Graham A.B. 1948, The George Washington University	N.C.
McCeney, Buchanan Houston	Iowa	McLesa, John Skelton	Ark.
McClellan, LaVonne Hedeen A.B. 1947, The George Washington University	Pa.	McLoud, Clovis Fred A.B. 1949, The George Washington University	Okla.
McCloskey, Sylvester John A.B. 1949, The George Washington University	D.C.	McMahan, Hardy Lee, Jr. B.S. 1948, Michigan State College	Tenn.
McClure, Rex Clark	D.C.	McMullen, Thomas Richard A.B. 1946, The George Washington University	D.C.
McClure, William Pendleton B.S. 1940, University of Pennsylvania	D.C.	McNally, Marietta Clara B.S. 1947, Temple University	Pa.
McConnell, Mary Alice A.B. 1912, Hollins College	Fla.	McNamee, Patience E. A.B. 1944, Immaculate Heart College	Nev.
McConnell, Elsha Riggs A.B. 1929, Davidson College	D.C.	McNeil, George Elroy, Jr. A.B. 1943, The George Washington University	Md.
LL.B. 1914, University of Virginia	Pa.	McOwen, John Joseph A.B. 1949, Marshall College	D.C.
McCook, Cornelius Joseph	W.Va.	McPherson, James Willis, Jr. LL.B. 1949, The George Washington University	Ohio
McCoy, William, Jr. A.B. 1941, Washington and Lee University	W.Va.	McQueen, Robert Keith A.B. 1945, The George Washington University	Iowa
McCullough, Frank Witcher, Jr. A.B. 1943, Tulane University	Md.	McRae, John Edwin B.Ch.E. 1948, University of Detroit	Md.
McCullough, William Harrison	Ky.	Mears, John Stephen, Jr. A.B. 1949, The George Washington University	Ind.
McDaniel, John Bennett B.E.E. 1946, University of Louisville	Mass.	Meerkreebs, Samuel B.E.E. 1943, University of Toledo	Ohio
McDermott, William Thomas B.S. 1915, University of New Hampshire	Ohio	Mellen, David Ralph Mellen, Robert David A.B. 1949, The George Washington University	N.Y. Va.
M.S. in Ed. 1936, Boston University	N.Y.	Melvin, Flavell Bryan, Jr. Mondelstohn, Sydney Henry	Va. Pa.
McDill, Thomas Kapp A.B. 1948, Miami University	Mont.	Mercer, Joseph Jackson, Jr. A.B. 1948, Emory University	Ga.
McDonough, Raymond John	Kans.	Mereghiana, Charles Eugene Metcalf, Richard A.B. 1947, A.M. 1948, University of Denver	D.C. D.C.
McDonough, Russell Charles	W.Va.	Metzger, Clyde Christian B.S. 1948, Pennsylvania State College	Pa.
McElroy, Virgil Maurice A.B. 1936, LL.B. 1938, University of Kansas	Ill.	Meyer, Lucille W. Meyers, Leonard Bernard	Tex. D.C.
LL.M. 1949, The George Washington University	Md.	Meyrowitz, Alvin Abraham A.B. 1948, Cornell University	N.Y.
McFarland, Edgar Elijah, Jr. McGee, Charles Edward B.S. in Ed. 1934, North Illinois State Teachers College	D.C.	M.B.A. 1941, New York University	Md.
McGill, George A.B. 1945, Furman University	Iowa	Meyrowitz, Leon A.B. 1949, The George Washington University	Pa.
McGinnis, Robert Allen	N.J.	Michael, Lowellyn Richard Mickler, Thomas Albert	Maine Pa.
McGowan, Melvin Joseph A.B. 1949, Coe College	Va.	Mihall, John J. A.B. 1949, Franklin and Marshall College	Pa.
McGrail, Edward Hugh A.B. 1941, St. Peter's College LL.B. 1948, Georgetown University	D.C.	Miho, Katsugo A.B. 1949, University of Hawaii	Hawaii
McGurrin, James Joseph A.B. 1949, The George Washington University	Mass.		
McIntyre, Ernest Richard	Ill.		
McKee, Joseph Patrick	N.C.		
McKee, James Oakes A.B. 1942, Knox College	D.C.		
McKee, Charles Baynor			
McKeon, Arthur Thomas B.M.E. 1948, Stevens Institute of Technology			

Milby, Katherine Rebecca B.S. 1937, Farmville State Teachers College, Va.	D.C.	Mooney, Patricia Ann A.B. 1941, Texas College of Mines A.M. 1944, East Texas State Teachers College	Tex.
Mileur, Alfred Donald	Okla.	Ph.D. 1946, Cornell University	
Milfelt, William Benjamin	Mo.	Mooney, Robert James	Conn.
Miller, Edwin Cyrus A.B. 1949, Muhlenberg College	Pa.	B.E.E. 1942, Yale University	
Miller, Herbert John, Jr. A.B. 1948, The George Washington University	Minn.	Moore, Arthur Daniel B.S. 1949, East Tennessee State College	Tenn.
Miller, Ida Schupp A.B. 1947, The George Washington University	D.C.	Moore, Boyd Guerry	D.C.
Miller, Leland Henry A.B. 1942, State College of Washington	Calif.	Moore, Charles Clifton, Jr.	D.C.
Miller, Melvin Eugene	Pa.	Moore, Jack Martin A.B. 1949, The George Washington University	Md.
Miller, Robert Preston B.S. in M.E. 1943, Cornell University	N.Y.	Moore, Jesse Myatt	Ark.
Miller, Rodney Arthur A.B. 1949, University of Pennsylvania	Md.	Moore, Stewart Fawcett A.B. 1943, Bethany College B.S. 1948, Carnegie Institute of Technology	W.Va.
Miller, Roy Hamilton	D.C.	Moore, Waldo Hawthorne	Va.
Miller, Theodore Arnold	Pa.	Moorehead, Carlton Swain A.B. 1949, Lenoir-Rhyne College	N.C.
Miller, Virginia Jane A.B. 1945, College of Wooster	Mass.	Moorehead, Courtney Marshall B.S. in M.E. 1949, University of Illinois	N.Y.
Miller, William Francis A.B. 1949, The George Washington University	Pa.	Morales-Yordan, Jorge A.B. 1948, University of Puerto Rico	D.C.
Milligan, William Francis, Jr. A.B. 1949, Colgate University	N.Y.	Moran, Leon James LL.B. 1949, The George Washington University	Conn.
Millis, Hugh Lowell, Jr. B.S. in E.E. 1945, Southern Methodist University	Tex.	Moran, Leroy A.B. 1949, Lynchburg College	Va.
M.S. in E.E. 1947, University of Texas		Mordas, George	N.J.
Millman, Max Roland B.S. 1937, College of the City of New York	N.Y.	Morgan, Don Earle	Ky.
Mills, James R., Jr. LL.B. 1937, DePaul University	Ill.	Morgan, Glenn Franklin, Jr.	D.C.
Mills, Mary Louise A.B. 1945, Bryn Mawr College	N.Y.	Morgan, John Edward	Md.
Millson, Keith Duane A.B. 1948, Grove City College	Pa.	Morgan, John Hamilton	D.C.
Minnick, John Bradley A.B. 1945, Amherst College	Va.	Morgan, Walter Lee, Jr.	D.C.
Misey, Edward Gabriel A.B. 1942, A.M. 1945, University of Wisconsin	Wis.	Morgenstein, Harvey Norman B.S. 1949, University of Maryland	Md.
Miskovsky, Milan Carl B.S.F. 1948, M.F. 1949, University of Michigan	Ill.	Moritz, Andrew Bruce A.B. 1942, University of South Dakota	S.D.
Mitchell, Charles Bradford Ph.B. 1928, A.M. 1929, Wesleyan University A.M. 1928, Ph.D. 1939, Harvard University	D.C.	Morley, John Royal A.B. 1949, Marietta College	N.J.
Mitchell, Edward Alexander A.B. 1943, University of Virginia	D.C.	Morrell, Leo Gregory B.S. 1947, Georgetown University	Pa.
Modance, Walter Aaron B.S. 1948, College of the City of New York	N.Y.	Morris, Jack Curtis A.B. 1949, Columbia University	Ill.
Modlin, Philip Hodgkin A.B. 1947, High Point College	N.C.	Morris, Lewis Dawson Master, Howard Irwin	Va.
Mogul, Robin A.B. 1948, Pennsylvania State College	Pa.	Morrison, Philip Hapworth B.S. 1944, University of New Hampshire	N.Y.
Mohr, Paul James	N.Y.	Morrison, William Llewelyn B.S. 1939, United States Coast Guard Academy	Maine
Moloney, John Francis B.S. 1948, Georgetown University	Ill.	Morrissey, Raymond Moss, Sidney J. A.B. 1948, The George Washington University	N.I.
Moody, William Augustus	Tenn.	Mowry, Boardman Shaw B.S. in C.E. 1941, Purdue University	D.C.
		Muller, Robert Albert	Ill.
		Mull, John Clifford	R.I.
		Muller, Raymond Carl B.S. 1949, University of Maryland	N.C.
		Mullin, Eugene Francis, Jr. A.B. 1945, Brown University	D.C.
		Mullinix, Allen Prather B.S. 1942, United States Naval Academy	D.C.
		M.S. 1926, Yale University	Ind.

Mundy, John Leo A.B. 1948, Lafayette College	Pa.	Norris, Lawrence Geoffrey B.S. 1947, University of Illinois	Ill.
Munroe, Alfred A. A.B. 1946, Municipal University of Wichita	Kans.	Norvell, Robert Joseph B.S. 1947, University of Wisconsin	Wis.
Munves, William A.M. 1947, Syracuse University	Va.	Nott, Joseph George Novakovich, Nada	Va. Nev.
Munves, William A.B. 1949, College of the City of New York	Va.	Nowlin, Joe Franklin LL.B. 1940, University of Arkansas	Ark.
Murphy, Harry Lee B.S. 1940, Grove City College	Pa.	Nunn, Frances Louise A.B. 1948, Vassar College	D.C.
Murphy, John Anzusa B.S. 1948, Georgetown University	D.C.	Nutter, Joseph William, Jr. A.B. 1947, Yale University	R.I.
Murphy, John Jay Murphy, Joseph Patrick A.B. 1949, The George Washington University	Nev. Va.	Nyhagen, Donald Richard B.S. 1944, University of California	D.C.
Murphy, Robert Bernard Murray, Herbert Henry B.M.E. 1948, The George Washington University	Wis. Md.	O	
Murray, Richard Charles, Jr. Murrish, Everett Clark A.B. 1947, Harvard University	D.C. Ohio	O'Brien, Edward Day B.S. 1947, Iowa State University	Iowa
Murtha, Edward A.B. 1940, Waynesburg College	D.C.	O'Brian, Paul William, Jr. A.B. 1948, University of North Carolina	D.C.
Musselman, Abby Milton B.S. 1947, University of Maryland	D.C.	O'Brien, James Dennis O'Brien, William John B.S. 1942, Tufts College	Iowa Mass.
Myres, Charles Ernest A.B. 1947, Rose Institute	Tex.	O'Connell, Edward, Jr. A.B. 1946, University of Michigan	Ala.
Nacker, Priscilla M. Nail, Edwin Starkey Nakashima, Sumio Nalla, John Willard, Jr.	D.C. Okla. Hawaii Md.	O'Connell, John Joseph O'Connor, Charles Frederick A.B. 1948, The George Washington University	Va. Va.
Narrow, Wiley L.L.B. 1941, The George Washington University	D.C.	M.B.A. 1940, University of Pennsylvania	
Neeley, Arthur Call B.S. 1948, Columbia University	Conn.	Old, Robert Yarnio O'Dea, Thomas Emmett	Hawaii D.C.
Nelson, Merle Ellsworth A.B. 1940, University of Minnesota	D.C.	Olds, Hugh Malcolm A.B. 1947, Pennsylvania State College	Pa.
Nelson, Robert Eugene A.B. 1941, Cornell College	Md.	Ofelt, George Richard B.S. in E.E. 1927, University of Minnesota	Va.
Nelson, Robert George Nershi, Michael Thomas A.B. 1940, The George Washington University	D.C. N.J.	O'Flaherty, Daniel Fairfax L.L.B. 1940, The George Washington University	Va.
Nesbit, Mary Katherine A.B. 1941, The George Washington University	D.C.	Oglesby, Nicholas Ewing, Jr. B.S. 1944, M.S. 1947, Rensselaer Polytechnic Institute	N.Y.
Netterville, Victor S. A.B. 1947, Indiana University	Ind.	O'Hara, Joseph Patrick A.B. 1948, The George Washington University	Minn.
Nevin, John Irving Newhouse, Leo Clark Newlin, Joseph Homan A.B. 1942, L.L.B. 1948, The George Washington University	N.Y. Md. Pa.	O'Hazza, Francis Edward A.B. 1940, Pennsylvania State College	Pa.
Newmyer, Armand Nicks, Louis Nichols, Warren James A.B. 1949, The George Washington University	D.C. D.C. Md.	O'Leary, Rawlin Eugene Oliver, James McIlwain, Jr. A.B. 1940, Emory and Henry College	Va. Va.
Nichols, Suzanne Mills Nixon, George Wendell Nolte, Carl Robert, Jr. A.B. 1948, College of William and Mary	Va. Md. D.C.	Olmet, Robert Francis Ortolan, Frank Richard B.S. 1944, B.S. in Ch.E. 1948, Pennsylvania State College	D.C. Pa.
Noone, Anthony Norman, George A.B. 1947, Western Maryland College LL.B. 1949, University of Maryland	Calif. Md.	Osburn, Robert B.O.E. 1941, Rensselaer Polytechnic Institute	Va.
		Osborn, Austin Godfrey B.S. 1940, University of Notre Dame	N.J.
		Oshersoff, Milton B.S. 1940, College of the City of New York	N.Y.
		Ornatok, Stephen Frederick A.B. 1947, Wittenberg College	N.J.
		Ottensm, Victor H. B.S. in Econ. 1948, University of Pennsylvania	D.C.

Otterman, Harvey Boyd A.B. 1949, The George Washington University	Vt.	Peartree, Frank Theodore A.B. 1940, William Jewell College	N.J.
Owen, George M.	D.C.	Peisner, Arthur A.	D.C.
Ozendine, Heaverd Dobber	N.C.	Pelham, David Elliot B.S. 1931, Tufts College	D.C.
Oxholm, Axel Waldemar A.B. 1949, The George Washington University	Wash.	Pellerzi, Leo Maurice LL.B. 1940, The George Washington University	D.C.
P			
Pace, Stephen, Jr. B.S. 1945, United States Military Academy	Ga.	Pendergast, Charles William Pendergrass, John Mullard A.B. 1945, Kalamazoo College	W.Va. Va.
Pacheco, Ricardo S.J.D. 1944, University of Javrciana	Colombia	M.P.A. 1946, Wayne University	D.C.
Page, Helen Bell A.B.-LL.B. 1948, The George Washington University	D.C.	Pendleton, Edmund E., Jr. B.S. 1942, University of Pennsylvania	D.C.
Pagter, Elizabeth Eugenia A.B. 1945, The George Washington University	D.C.	LL.B. 1948, Georgetown University	D.C.
Pallas, Themis Constantine B.S. in I.E. 1948, Washington University	Ms.	Pendleton, George Cassity B.S. 1942, University of Maryland	D.C.
Pallansch, Margaret Mary A.B. 1940, Trinity College	D.C.	LL.B. 1948, Georgetown University	Miss.
Palmer, Arthur Andrew B.S. 1948, University of Maryland	Va.	Pennyan, Lola	Md.
Palmer, William Colton A.B. 1948, The George Washington University	MI.	Perenich, Margaret Lucy A.B. 1945, Trinity College	D.C.
Palmas, Lowell Richard LL.B. 1949, The George Washington University	Va.	Perez, Horace Hugo B.S. 1946, Louisiana State University	D.C.
Pandiscio, Nicholas Anthony B.S. in Ch.E. 1947, Northeastern University	Mass.	Perkins, Alfred William, Jr. Perros, George Peter A.B. 1940, The George Washington University	D.C. D.C.
Parham, Robert Russell A.B. 1949, University of Texas	Tex.	Perry, Elena Victoria A.B. 1948, Hunter College	D.C.
Parker, Charles Hanke B.S. 1943, Worcester Polytechnic Institute	D.C.	Perry, Robert Charles Perry, Thomas Daniel A.B. 1940, LL.B. 1949, University of Buffalo	Miss. N.Y.
Parker, O. B.	Md.	Petersen, Stanley Wilhelm A.B. 1942, The George Washington University	N.Y.
Parker, Ralph Woodford A.B. 1939, Georgetown College	Md.	Peterson, Charles David A.B. 1948, Harvard University	Maine
Parkinson, Kenneth Wells	Md.	Petkovich, Samuel Peto, John B.S. 1947, College of the City of New York	Ohio N.J.
Parriah, John Poindexter	Va.	Pettigrew, W. B. B.S. 1944, Maryville State Teachers College, Md.	Va.
Pastoriza, Ralph Babcock B.S. 1944, California Institute of Technology	N.Y.	Pfeiffer, Frederick Thompson A.B. 1947, University of North Carolina	D.C.
Patch, Robert John B.S. 1948, University of Michigan	D.C.	Phelan, Catherine Elizabeth A.B. 1940, Clarke College	Wyo.
Pattillo, Andrew Gramling, Jr. B.S. in B.A. 1949, University of Florida	Fla.	Phelan, Patrick John Phelps, Allen Warner Pherson, John Randolph A.B. 1948, The George Washington University	Va. D.C. D.C.
Patton, Arthur Gordon A.B. 1946, Yale University	Va.	Phillips, Gordon Allison Ph.B. 1947, University of Chicago	Ark.
Patty, Clarence Ralph, Jr. B.S. in E.E. 1940, University of Tennessee	Va.	Phillips, Samuel Lafayette Philpitt, Frederick Charles B.S. in Ch.E. 1947, University of Maryland	Md. D.C.
Paulisch, Eugene Bernard A.B. 1949, The George Washington University	Pa.	Pickens, John Kenneth A.B. 1939, LL.M. 1949, The George Washington University	D.C.
Paulson, Norman Clarence	S.D.	LL.B. 1947, Harvard University	
Payne, Francis Xavier	Md.	Pickering, Leonard Leroy	Okla.
Payne, William Darby A.B. 1949, University of Maryland	D.C.	Piezik, Walter Alfred A.B. 1949, Wilkes College	Pa.
Pear, Leon B.S. 1947, University of Maryland	D.C.	Pierce, James Baker B.S. in E.E. 1943, University of Michigan	Mich.
Pearson, Beverly Stocking A.B. 1940, Vassar College	Md.		

Pincus, Arthur A.B. 1948, The George Washington University	D.C.	Queisser, Richard Curtis B.S. in E.E. 1937, New York University	Va.
Pincus, William A.B. 1941, Brooklyn College A.M. 1948, American University	N.Y.	Quenstedt, Warren Daley Quigley, Calvin Carlyle A.B. 1948, University of Colorado	D.C. Va.
Pinkham, Richard Collins B.S. in Ch.E. 1948, Northeastern University	Md.	K	
Fletcher, Ralph Weidon B.S. 1948, University of Maryland	D.C.	Ragsdale, Gerald Hamilton A.B. 1938, Montana State University	Mont.
Plyer, Alfred Hutchinson, Jr. B.S. 1948, Rice Institute	Tex.	Rand, Alice M. A.B. 1935, Wellesley College	Conn. Pa.
Poage, Jack Pat B.S. 1949, West Virginia University	W.Va.	Raring, Frederick William B.S. 1949, Lehigh University	Pa.
Pollack, Leonard Porter, Ross George	Pa. D.C.	Rasmussen, Frank Joseph B.S. in M.E. 1939, University of Illinois	Md.
Pooser, Leonard Raymond A.B. 1939, University of Connecticut LL.B. 1942, Yale University	Conn. D.C.	Rath, Robert Karl Ratliff, William Richard Ratner, Max Rea, James Magruder A.B. 1943, University of Maryland	Ohio Va. D.C. Md.
Postman, Martin Samuel B.S. in E.E. 1946, Virginia Polytechnic Institute	D.C.	Reagan, James Edwin Reardon, Barbara Ellen A.B. 1948, University of Washington	D.C. Wash.
Poston, Met Ray B.S. 1943, University of Chattanooga	Va.	Rearick, Anderson Melvin, Jr. B.S. 1949, Wheaton College	Pa.
Poston, Raymond Lee, Jr. Poston, Robert Rolland B.S. 1934, State University of Iowa	Va. Va.	Reback, William Recktenwald, William Elmer B.S. in M.E. 1948, Purdue University	N.Y. N.Y.
Potter, Ralph E. B.M.E. 1945, The George Washington University	D.C.	Redd, Lavinia Lindsay A.B. 1935, Randolph-Macon Woman's College	Va.
Potter, Thomas Willoughby Jr. B.S. in Ed. 1949, Eastern Illinois State College	Ill.	Redmond, Joseph C., Jr. B.S. 1944, Tufts College B.E.E. 1948, The George Washington University	Md.
Pourharas, Stephen William A.B. 1948, Brown University	R.I.	Reed, Hallie Mae A.B. 1937, The George Washington University	Va.
Powell, John Frederic Power, Andrew Paul A.B. 1947, The George Washington University	Md. N.Y.	Reeder, Ronald Ronson A.B. 1949, Shepherd College A.M. 1946, The George Washington University	W.Va.
Powers, William L. A.B. 1929, Princeton University	Ohio	Rees, Ira Jack A.B. 1934, Municipal University of Wichita	Md.
Poznak, Morton Pravel, Bernard Roe B.S. in Ch.E. 1947, Rice Institute	N.J. Tex.	Reese, Elmer Louis, Jr. B.S. 1942, University of Maryland	Md.
Prendergast, James Francis A.B. 1938, Lafayette College	Pa.	Regula, Elmer Lee B.S. 1948, Butler University	D.C.
Preslar, Stephen Franklin Preston, Edwin Page LL.B. 1948, Washington and Lee University	Tex. Tenn.	Reid, James Sharp A.B. 1937, Cornell University	D.C.
Preston, Walter Harlan Prezia, Samuel B. LL.B. 1947, LL.M. 1949 National University	D.C. N.Y.	Reid, Paul Samuel B.S. in E.E. 1944, Virginia Polytechnic Institute	Md.
Price, James Travis Price, Milo V. Price, Robert Nelson A.B. 1948, Haverford College	Tenn. Nev. D.C.	Reid, William Grant Reidlin, Martin Gardner B.M.E. 1945, College of the City of New York	D.C.
Procaccino, Joseph Anthony A.B. 1943, College of the City of New York	D.C.	Reilly, George Kenneth Gordon A.B. 1947, The George Washington University	Wash.
Pulfrey, Robert Earl B.S. 1947, Jamestown College	Va.	Reising, Paul Joseph B.S. 1947, Xavier University M.S. 1949, University of Detroit	D.C.
Putterman, Felix Maurice	Va.	Reitman, Seymour George Remer, Bertram Robert B.S. in E.E. 1946, Duke University	N.J. D.C.
Q			
Quarforth, Carl Donald B.Ch.E. 1946, University of Virginia	S.D.		
Queen, Francis Vernon A.B. 1941, Berea College	Va.		

Reque, Robert Russell	D.C.	Robertson, Roger E.	Md.
Reynolds, Chester Forrest	D.C.	B.S. 1942, M.S. 1942, Massachusetts Institute of Technology	D.C.
LL.B. 1949, The George Washington University		Robertson, William George	D.C.
Reynolds, Gary Stewart	N.Y.	B.S. 1948, University of North Carolina	N.Y.
Reynolds, William Lavern	D.C.	Robinson, Alfred Arnold	N.Y.
Reynolds, William Neville	Va.	B.S. 1932, Agricultural and Mechanical College of Texas	Pa.
A.B. 1948, The George Washington University		Robinson, Armand Irving	Pa.
Rhine, Mary Elizabeth	Pa.	B.S. 1949, Drexel Institute of Technology	D.C.
Rhodes, Robert Garrett	Pa.	Robinson, Thomas Adams	D.C.
B.S. 1947, University of Pittsburgh		Rodenbeck, Frederick Ludwig	D.C.
M.B.A. 1948, University of Pennsylvania		A.B. 1940, A.M. 1941, University of Nebraska	Pa.
Rhyne, Brice Wilson	Va.	Rodgers, James Edwin	N.Y.
Rich, Donald Jenkins	Md.	Rodgers, John Robert	N.Y.
Rich, Francis Earl	Miss.	B.S. 1914, Fordham University	Va.
B.S. 1941, United States Naval Academy		Rogal, William Walter	Pa.
Richards, William Robert	D.C.	Rogers, Harold John	Va.
Richardson, Paul Bryant	D.C.	A.B. 1947, University of Scranton	
B.S. 1949, Davidson College		Rogg, Nathaniel Hyman	
Richardson, Robert Owen	Mo.	A.B. 1914, A.M. 1935, New York University	D.C.
B.S. 1946, Drury College	Va.	Roller, Frank Coiner	Tex.
Richardson, Thomas Totten	Pa.	B.S. 1949, University of Arizona	
Richwine, Francis Kost		Romero, Mario Saavedra	
B.S. 1941, Pennsylvania State College		A.B. 1918, National University of Mexico	Md.
LL.B. 1949, The George Washington University		Rommel, Wilfred H.	D.C.
Richards, Herbert Betz	Mich.	B.S. 1917, North Dakota State Teachers College	Fla.
Riddles, Alvin Joseph	Pa.	Rood, George Henry	Wash.
B.E.E. 1949, Catholic University of America		A.B. 1930, University of Florida	D.C.
Ridpath, Robert Vance	Ind.	Rooney, William Albert	
Ries, Carl Gilbert	Wyo.	Rosada, Stefan	
B.S. 1947, University of Wyoming		LL.B. 1922, University of Poznan, Poland	N.J.
Riggs, Bradner Charles	Va.	Rose, Alan Conrad	Pa.
Riley, Jeremiah Thomas	Mont.	B.S. 1947, Massachusetts Institute of Technology	Pa.
Ring, Paul Donald	N.C.	Rose, Donald Lewis	N.Y.
Risler, Robert Lorain	W.Va.	B.S. in Ch.E. 1947, Pennsylvania State College	N.Y.
A.B. 1947, Shepherd College		Rosenberg, Seymour Morton	Ohio
Ritchie, Frederick Monks	Md.	B.E.E. 1944, College of the City of New York	D.C.
B.M.E. 1949, The George Washington University		Rosenberg, William Theodore	Pa.
Ritterpusch, Irvin John	Md.	Rosenthal, Alan Henry	
A.B. 1950, University of Maryland		Ross, Daniel Michael	D.C.
Robbins, Frank Edward, Jr.	N.Y.	A.B. 1946, A.M. 1949, The George Washington University	D.C.
B.Ch.E. 1944, Rennsaler Polytechnic Institute		Ross, Samuel B.	R.I.
Robbins, Glenn Kingsland	Mo.	A.B. 1921, University of Pittsburgh	
B.S. in Ch.E. 1947, Washington University		A.M. 1924, Ph.D. 1931, Columbia University	
Roberson, Edwards Pierce	D.C.	Rossi, Henry	Pa.
B.S. 1939, University of South Carolina		A.B. 1919, The George Washington University	N.Y.
Roberts, Ben Lomond	Md.	Rosster, Samuel Ulrich	Va.
Roberts, Jennings Nicholas	D.C.	A.B. 1917, Allegheny College	N.Y.
A.B. 1939, Morris Harvey College		Rothberg, Samuel B.	Va.
LL.B. 1943, LL.M. 1945, Georgetown University		Rothrock, John Allen, Jr.	N.Y.
Roberts, John Summerfield, Jr.	Va.	B.S. 1945, Northwestern University	
B.S. in Chem. 1941, University of Virginia		Rotkin, Irving Jacob	
Roberts, Lewis Ross	D.C.	B.S. in M.E. 1946, Virginia Polytechnic Institute	S.D.
Roberts, Perry Leonard	Va.	Rouchaux, Ramon Arthur	D.C.
B.S. 1938, Oklahoma Agricultural and Mechanical College		Roudsath, Robert Maskey	
Roberts, Raymond F.	Ohio	B.S. 1949, University of Maryland	
A.B. 1949, Ohio University			
Roberts, Richard E.	Va.		
Roberts, Richard Mansfield	Md.		
LL.B. 1948, The George Washington University			

Rousar, Edward Everett	Va.	Samuels, Joseph Paul	W.Va.
LL.B. 1949, The George Washington University		B.S. 1946, West Virginia University	
Rowe, Willis Case	D.C.	Sanchez, Burdette Boardman	Pa.
A.B. 1949, The George Washington University		Sander, Dora	D.C.
Rowitz, Bernard	N.J.	A.B. 1943, Radcliffe College	
A.B. 1948, Rutgers University		Sanders, Frank Powell	N.C.
Rovance, Donald Carvar	Md.	Sanders, John Albert	Pa.
Ruditz, David	N.Y.	A.B. 1948, The George Washington University	
A.B. 1949, The George Washington University		Sause, Edward Francis	N.J.
Rudman, Gerald Earl	Maine	B.S. 1949, Georgetown University	
A.B. 1949, University of Maine		Savags, Julian	D.C.
Rue, Gloria Hope	D.C.	Scarborough, James K.	Miss.
A.B. 1949, The George Washington University		A.B. 1949, The George Washington University	
Rugen, Barbara Dorach	D.C.	Scariot, Angelo John	Va.
A.B. 1943, Wooster College		A.B. 1948, The George Washington University	
Russ, Wilbur Joseph	Calif.	Scarritt, Ralph	Va.
A.B. 1950, University of California		A.B. 1941, Denison University	
Russell, Denver Lee	Ohio	Schaefer, William John	D.C.
A.B. 1947, Mount Union College		A.B. 1940, University of Pittsburgh	
Russell, Robert Raymond	D.C.	Schaefer, Frederick	D.C.
B.S. 1950, United States Coast Guard Academy		B.S. 1925, The George Washington University	
Russell, Thomas Hale	Va.	LL.B. 1928, Georgetown University	
A.B. 1940, Harvard University		Schappert, Joseph Matthew	Va.
Russell, William David	Mo.	A.B. 1948, Queens College	
A.B. 1938, LL.B. 1938, University of Missouri		Schattner, Theodore Jacob	N.Y.
Ruszkiewicz, Joseph Edward	Pa.	A.B. 1941, College of the City of New York	
B.S. in E.E. 1948, University of Pittsburgh		Schelberg, William Vincent	D.C.
Rutledge, Jean Ann	D.C.	B.S. in E.E. 1935, Louisiana State University	
A.B. 1947, Indiana University		Schenck, Joseph Samuel	N.C.
Rutledge, John	Va.	Scherback, William John	N.J.
Ryan, Burton Thomas	N.Y.	B.S. in E.E. 1946, University of Wisconsin	
Ryan, Charles Patrick	Pa.	Schiller, David Mulford	Pa.
Ryan, James Anthony	Vt.	B.S. in E.E. 1948, Carnegie Institute of Technology	
B.S. 1940, College of the Holy Cross		Schink, Harry Charles	Md.
LL.B. 1947, Cornell University		B.S. in Ch.E. 1943, Carnegie Institute of Technology	
Ryan, John Clifford	D.C.	Schmertz, Robert Colgan, Jr.	Pa.
A.B. 1947, Iona College		B.S. in E.E. 1943, Princeton University	
Ryan, John Thomas	W.Va.	Schneiber, Rosalyn	D.C.
A.B. 1948, West Virginia University		A.B. 1949, The George Washington University	
Ryan, Robert Edwin	Pa.	Schneider, Edwin Roy	Mich.
Rymer, Thomas Arrington	Md.	A.B. 1948, University of Michigan	
B.C.E. 1948, Cornell University		Schneider, Walter Henry	N.J.
Sacardi, Clarence Richard	D.C.	B.S. 1943, Virginia Polytechnic Institute	
Sadowsky, Gersten	N.Y.	Schoenfeld, John Short Reid	D.C.
B.M.E. 1947, College of the City of New York		A.B. 1940, Washington and Lee University	
Sador, Marvin Phillip	D.C.	Scholtz, Edward Karl	Nebr.
A.B. 1947, The George Washington University		Schonberg, David	Md.
Saffitz, Abraham Alan	N.Y.	B.S. 1940, Brooklyn College	
A.B. 1936, Cornell University		Schonberger, Eugene	Va.
St. John, Charles Richard	Ohio	Schrier, Edward	D.C.
A.B. 1948, University of Akron		B.S. 1940, University of Maryland	
Sakar, Hiroshi	Hawaii	Schroeder, Frederick John	Va.
Salladay, David Eugene	Wyo.	B.S., United States Naval Academy	
Salter, Elliot Arnold	R.I.	M.B.A. 1940, Harvard University	
B.S. in Eng. 1945, Brown University		Schuler, Harland Aaron	Va.
Sames, Mary Ann	Mo.	B.S. in B.A. 1948, Georgetown University	
A.B. 1947, University of Missouri		Schultz, Herman David	N.Y.
Samolsky, Myles Stanford	Pa.		
A.B. 1949, Washington and Jefferson College			
Samowitz, Charles S.	D.C.		
B.M.E. 1948, College of the City of New York			

Schultz, John Hooker	Md.	Sherman, William Robert	Ill.
LL.B. 1949, The George Washington University		B.S. 1946, University of Wisconsin	
Schupp, Eric Adolph	D.C.	Sherwood, James Steck	Va.
Schussler, John D.	D.C.	A.B. 1947, The George Washington University	
B.S. 1930, Gettysburg College		Shields, Carrington	D.C.
Schwartz, Helen Janet	D.C.	A.B. 1931, Randolph-Macon Woman's College	
A.B. 1948, The George Washington University		M.S. 1937, Columbia University	Hawaii
Schwartzbach, Saul Marvin	D.C.	Shim, Alvin Tong	Conn.
A.B. 1949, The George Washington University		A.B. 1940, University of Hawaii	
Schwinn, Mack Eugene, Jr.	W.Va.	Shindell, Sidney	
A.B. 1948, West Virginia University		B.S. 1944, Yale University	
Scopi, Rosemary Patricia	D.C.	M.D. 1946, Long Island College of Medicine	
A.B. 1947, Trinity College		Shine, Howard Lawrence	D.C.
Scott, James Davis	Pa.	A.B. 1940, Bowling Green State University	
A.B. 1947, Princeton University		Shingler, Julian James	Ga.
Seaman, Leslie Thomas	N.Y.	B.S. in M.E. 1939, United States Coast Guard Academy	
Secrest, Edgar Lee, Jr.	Tex.	Shingler, William Gendron, Jr.	D.C.
B.S. 1941, University of Georgia		A.B. 1946, University of Missouri	
Sedmak, Michael Edward	Pa.	Shipley, George Edward	D.C.
A.B. 1949, Muhlenberg College		Shoemaker, Francis Dodge	Md.
Seidel, Arthur Harris	N.Y.	B.S. in M.E. 1937, University of Maryland	
B.S. 1943, College of the City of New York		Shoemaker William Robert	Ala.
A.M. 1943, University of Michigan		Shookman, Loyd Allen	Ind.
Servais, Raymond Alois	Wis.	A.B. 1940, The George Washington University	
A.B. 1950, The George Washington University		Shore, Jacob	Ohio
Seybert, Harry David	D.C.	B.S. in M.E. 1946, Illinois Institute of Technology	
Shaffer, Earl Edward	W.Va.	Shotwell, Clark Harding	Va.
Shalowitz, Ernest Maurice	D.C.	Shoup, Wilson Elliott	Ind.
Shank, Robert Edgar	Md.	A.B. 1937, Indiana University	
Shapiro, David	N.Y.	Shryock, Richard Fuller	Md.
Shapiro, Nelson Hirsch	D.C.	A.B. 1939, University of North Carolina	
B.E.E. 1948, Johns Hopkins University		Shugar, Harold Bernard	N.C.
Sharkey, James Francis	Pa.	A.B. 1946, University of South Carolina	
Sharp, Daniel DeWitt	Mass.	Shugart, Elizabeth Wise	W.Va.
B.S. in E.E. 1939, Northeastern University		A.B. 1947, Ohio University	
Shaw, Constance Eleanor	D.C.	Shutkin, Joseph Jerome	Wis.
A.B. 1949, Duke University		A.B. 1947, University of Wisconsin	
Sheble, Walter Franklin	Pa.	Sidwell, James Dudley	Mo.
A.B. 1948, Princeton University		Siegel, Abraham	Calif.
Sheehan, Edward Patrick	Va.	B.S. 1940, College of the City of New York	
A.B. 1949, The George Washington University		Silverman, Aaron	D.C.
Sheeran, James Joseph	N.J.	A.B. 1947, The George Washington University	
Sheeskin, Jacob	D.C.	Siskind, Eliot Irvin	Md.
LL.B. 1949, The George Washington University		A.B. 1948, Johns Hopkins University	
Sheff, Irving	Mass.	Sitler, Willard Stanley	Pa.
A.B. 1948, The George Washington University		B.S. 1918, Pennsylvania State College	
Shalhorse, George Walter	Va.	Sizemore, Harry Daniel	Va.
Sherly, Laurence Polkinhorn	Md.	A.B. 1949, College of William and Mary	
A.B. 1933, LL.B. 1936 A.M. 1947, The George Washington University		Skalsk, Rosa	N.Y.
LL.M. 1937, Harvard University		A.B. 1919, Hunter College	
Sheridan, Philip Henry	D.C.	B.S. 1940, Columbia University	
B.S. in E.E. 1944, Worcester Polytechnic Institute		Skelly, George Martin, Jr.	Md.
Sheridan, Philip Regus	Pa.	A.B. 1949, The George Washington University	
A.B. 1949, The George Washington University		Skillman, Douglas Benjamin	Va.
Sherman, Albert Stanley	N.Y.	B.S. 1942, Pennsylvania State College	
A.B. 1943, University of Rochester		Skinner, Henry Rosa	Wyo.
Sherman, Benjamin	N.Y.	B.S. 1947, University of Wyoming	
A.B. 1948, New York University		Sloane, Edward Frederick	Md.
Sherman, Fred	Va.		
A.B. 1934, University of Oklahoma			

Small, Grover Lee	D.C.	Spaulding, John Henry	D.C.
A.B. 1949, University of Maryland		A.B. 1949, The George Washington University	
Smigielski, Joseph Francis	Mass.	Spector, Eugene Paul	D.C.
B.S. 1941, Boston College		A.B. 1947, The George Washington University	
Smith, Allen Harold	Pa.	Spector, George	N.Y.
A.B. 1949, Gettysburg College		B.C.E. 1942, M.C.E. 1947, Polytechnic Institute of Brooklyn	
Smith, Chester Horace	Nev.	Spence, Charles E., Jr.	Idaho
Smith, Dudley Burcham	Oreg.	Spelman, Milton Roy	Ohio
B.S. 1945, California Institute of Technology		B.S. 1944, Case Institute of Technology	
Smith, Emory Clark	Tex.	Spinner, J. Robert	Ill.
A.B. 1920, North Texas State Teachers College		Spivey, Thomas Denmuth	Va.
A.M. 1933, University of Texas		A.B. 1940, University of North Carolina	
LL.B. 1937, Southern Methodist University		Springer, Curtis Howe	Ala.
Smith, Frederick Holmes	W.Va.	A.B. 1940, University of Alabama	
A.B. 1943, West Virginia University		Sroka, Edward Andrew	Va.
LL.B. 1949, Washington and Lee University		B.S. 1941, Purdue University	
Smith, George Francis	D.C.	Stacy, Charles Mack	Ark.
Smith, Hugh Edward	N.Y.	B.E.E. 1940, Georgia Institute of Technology	
B.Ch.E. 1947, Rensselaer Polytechnic Institute		Stanley, Earl R.	Okla.
Smith, Jack Albert	N.M.	B.S. 1943, Kent State University	
Smith, Leon	D.C.	LL.B. 1940, The George Washington University	
A.B. 1947, LL.B. 1948, The George Washington University		Stark, John Regan	D.C.
Smith, Robert	N.Y.	A.B. 1938, Cornell University	
Smith, Thomas Warner	D.C.	M.P.A. 1941, New York University	
A.B. 1948, The George Washington University		Stauffer, James Elwood	Calif.
Smith, Tomas Arthur	Md.	A.B. 1940, Franklin and Marshall College	
A.B. 1949, The George Washington University		Steadman, Lewis Tilden	Mich.
Smith, Wallace Morrell	Va.	B.M.E. 1946, Syracuse University	
A.B. 1949, The George Washington University		Steenerson, Palmer Seymore	D.C.
Smith, William Nesbit	Pa.	Stehl, Edward	Md.
B.S. 1933, Bucknell University		A.B. 1949, The George Washington University	
Snyder, Martha Frances	Va.	Stein, Mervin	Pa.
A.B. 1945, LL.B. 1946, LL.M. 1947, The George Washington University		B.S. 1947, B.C.E. 1948, Rensselaer Polytechnic Institute	
Sohl, Walter Wood, Jr.	Ill.	Stein, Stanley	N.Y.
A.B. 1930, DePauw University		A.B. 1940, The George Washington University	
A.M. 1940, Georgetown University		Steinbauer, Walter Henry, Jr.	D.C.
Solomon, Edward Jr.	Pa.	B.S. 1947, Emory and Henry College	
A.B. 1949, Pennsylvania State College		Steinberg, Jules Henry	N.Y.
Solomon, Lewis Jay	N.J.	B.S. 1948, Pennsylvania State College	
Soltow, William Donald, Jr.	Ohio	Steinberger, Hugh Marion	D.C.
B.M.E. 1948, Rensselaer Polytechnic Institute		B.S. 1941, University of Virginia	
Somers, George Britton	Va.	Steiniger, John Francis, Jr.	D.C.
A.B. 1910, University of Richmond		A.B. 1948, LL.B. 1949, University of Kansas	
Soucek, Frank James	Va.	Steiner, Archie Kenneth	Tenn.
B.E.E. 1948, The George Washington University		A.B. 1918, Lincoln Memorial University	
Souther, Arthur Fuller	Va.	B.S. 1936, East Tennessee State College	
Southerland, Elizabeth Lamkin	Va.	M.S. 1940, University of Tennessee	
A.B. 1940, University of Georgia		Steiner, Paul Lewyn	D.C.
Southwell, Paul M.	Va.	Steinert, Leif Magne Emil	N.Y.
A.B. 1942, The George Washington University		Steinmeyer, Robert Jay	D.C.
Sowell, John Broadus	D.C.	B.S. 1943, University of Nebraska	
B.M.E. 1947, Georgia Institute of Technology		Stephens, John	Fla.
Spain, Norman Noah	N.Y.	A.B. 1946, The George Washington University	
A.B. 1946, Brooklyn College		Stephens, William Theodore	Md.
Spangle, Clarence Wilbur	Pa.	Sternberg, Arnold Charles	Mass.
H.E.E. 1945, Yale University		A.B. 1947, University of Wisconsin	
Spann, George Klepfer	D.C.		
Sparks, Edward Dean	Colo.		
B.S. 1946, University of Oklahoma			

Stetson, Richard A.B. 1948, The George Washington University	Md.	Strickler, Richard Gahagan A.B. 1932, Pennsylvania State College	Va. N.Y.
Stetson, Rufus Edwin, Jr. A.B. 1947, Bowdoin College	Md.	Strickman, Louis A.B. 1948, The George Washington University	N.Y.
Stetsoy, John Hewes A.B. 1950, University of Maryland	Md.	Strother, Calvin Arnold A.B. 1947, Harvard University	Okla.
Stevas, Alexander Louis	Pa.	Stuart, Jasper Edwin Stuart, Kenneth Earl	Wash. Ind.
Stevens, Donald Junior A.B. 1940, Muhlenberg College	Ohio	Stubbs, Robert Sherwood	Ala.
Stevens, Joseph Leopold S.J.D. 1935, University of Virginia	Md.	Stultz, Norman Frederick Stultz, Travers David	Mass. Md.
Stewart, Clark Berry B.M.E. 1948, Clemson College	Va.	Sturtevant, Alderic Clarence A.B. 1949, The George Washington University	Md.
Stewart, David Alfred, Jr. Stewart, Francis John A.B. 1948, West Virginia University	Miss. Pa.	Styles, Michael Hogan A.B. 1947, A.M. 1949, University of Virginia	Va.
Stewart, Rodney Ward A.B. 1931, Carleton College A.M. 1934, University of Chicago Ph.D. 1938, Harvard University	D.C.	Sukalo, Charles B.S. 1944, Newark College of Engineering	N.J.
Stewart, William Alex B.M.E. 1949, Rensselaer Polytechnic Institute	N.Y.	Sullivan, Arthur Victor, Jr. Sullivan, Charles Xavier Sullivan, Eugene Francis B.S. 1948, The George Washington University	D.C. R.I. Md.
Stickney, Bernard B.S. 1938, College of the City of New York	N.Y.	Sullivan, John Christian Sullivan, Joseph Raymond, Jr. B.S. 1947, Georgetown University	Md. N.J.
Stifter, William Warren, Jr. A.B. 1939, Amherst College	Md.	Sullivan, Patrick Gerald B.S. 1949, Texas College of Mines and Metallurgy	Tex.
Stiles, Meredith N., Jr. A.B. 1946 Amherst College	N.J.	Sullivan, Thomas Vincent A.B. 1942, New York University	N.Y.
Stilling, Richard Justesen A.B. 1950, University of Maryland	D.C.	Sullivan, William Franklin Summey, Ara Long LL.B. 1949, University of Richmond	Md. W.Va.
Stilson, Lewis Francis Stitelman, Joseph B.S. in E.E. 1934, Cooper Union	D.C. D.C.	Supinski, John Sures, Charles Stanley A.B. 1947, LL.B. 1949, The George Washington University	Pa. D.C.
Stitley, David Wesley B.S. 1949, Pennsylvania State College	Va.	Sussholz, Leonard B. A.B. 1948, The George Washington University	N.Y.
Stolko, Stephen James, Jr. B.S. 1949, University of Maryland	Pa.	Sutherland, Henry Clifton B.S. 1942, Virginia Military Institute	Va. D.C.
Stoll, Ervin Wightman B.S. in B.A. 1947, LL.B. 1948, University of South Carolina	S.C.	Swanner, J. Bailey B.B.A. 1949, Howard Payne College	Pa.
Stolwein, Walter B.S. 1937, College of the City of New York	Md.	Swartz, Christian LeFevre B.S. 1937, University of Pennsylvania LL.B. 1946, Temple University	Va.
Stonebraker, Dan A.B. 1947, University of Rochester	N.Y.	Swayze, Roy Albert Sweeney, James Charles, Jr. B.S. in B.A. 1948, University of Denver	Pa. Colo.
Stoner, James Reist B.S. in Econ. 1949, Franklin and Marshall College	Pa.	Sweeney, Stuart Hackstaff A.B. 1940, Upsala College	N.J.
Stork, Creighton Mitchell A.B. 1949, College of Charleston	S.C.	Sweeney, Vincent Hilary B.S. 1949, Boston College	Mass.
Stotta, Johnnie Muri B.B.A. 1940, Stephen F. Austin State Teachers College	D.C.	Sweitzer, Henry Becker B.S. 1941, United States Naval Academy	Pa.
Stoutler, Edwin Immell, Jr. Stoyanov, Sam A.B. 1948, The George Washington University	D.C. Ohio	Sylvester, Eugene Paul Sylvester, Malcolm Duncan B.S. 1934, United States Naval Academy	N.J. Pa.
Strachman, Philip A.B. 1941, College of the City of New York LL.B. 1949, Georgetown University	N.Y.	J.D. 1939, The George Washington University	
Strahan, John Barwick A.B. 1935, LL.B. 1938, Louisiana State University	La.		
Streb, Samuel Stephen Strein, Clare Julia LL.B. 1940, The George Washington University	D.C. Pa.		

T

Taffet, Hans	N.Y.	Thomas, William Franklin	Oreg.
A.B. 1949, The George Washington University		B.S. 1948, University of Oregon	
Tafuya, Ben	Md.	Thompson, Conrad Warden	W.Va.
Tait, Reid Clifford	Md.	B.S. 1948, Marshall College	
Talbot, Charles Edward, Jr.	Va.	Thompson, Curtis Eugene	Va.
A.B. 1948, American University		A.B. 1940, Concordia College	
Talley, James Staton	Va.	Thompson, James Elmer, Jr.	Md.
A.B. 1949, The George Washington University		A.B. 1949, University of Maryland	
Tanner, Thomas Louis, Jr.	Va.	Thompson, Lucius Fred	Ga.
Tanos, James Dimitri	Pa.	LL.B. 1949, The George Washington University	
A.B. 1949, University of Pennsylvania		Thompson, Matthew Charles	Iowa
Taphorn, Joseph Bernard	Ill.	B.S. in Ch.E. 1949, Iowa State College	
B.S. in Agri. 1943, University of Illinois		Thompson, Stanwood	Md.
B.S. in Eng. 1949, The George Washington University		A.B. 1949, State College of Washington	
Tashjian, Lee Charles	Md.	Thompson, Thomas Carlton, Jr.	Md.
A.B. 1949, The George Washington University		B.S. in Econ. 1948, University of Pennsylvania	
Tavennner, Frank Brennan	Va.	Thorniley, Robert Miller	D.C.
LL.B. 1949, The George Washington University		LL.B. 1949, The George Washington University	
Taylor, Andrew Eustace	D.C.	Thornton, Luther, Jr.	D.C.
B.S. in M.E. 1947, Tufts College		A.B. 1950, James Millikin University	
Taylor, Charles Elmer, Jr.	Md.	Thornton, Percy, Jr.	N.C.
B.S. 1948, University of Maryland		Threadgill, Eugene Earl	D.C.
Taylor, Daniel Gerald	D.C.	A.B. 1940, University of Florida	
A.B. 1949, Salem College		LL.B. 1944, Georgetown University	
Taylor, Dyer Justice	D.C.	Threadgill, William James	Miss.
Taylor, Edward Rathbon	D.C.	A.B. 1947, University of Mississippi	
A.B. 1947, Lafayette College		Thurman, John Nelson	Ariz.
Taylor, Harry Earl, Jr.	Md.	B.S. 1949, Georgetown University	
A.B. 1948, The George Washington University		Thurmond, Cornelius Brooks, Jr.	Ga.
Taylor, James D.	Ky.	Tibbott, David Winship	Va.
A.B. 1948, Western Kentucky State Teachers College		B.M.E. 1943, University of Virginia	
Taylor, John Frank	Okla.	Tiley, Edward Henry, Jr.	Va.
A.B. 1936, LL.B. 1939, University of Oklahoma		A.B. 1948, West Virginia University	
Tebau, John Peter	R.I.	Tillman, Murray	N.Y.
Technr, Martin Richard	Pa.	A.B. 1944, Brooklyn College	
Teltser, Harold Robert	N.J.	Tillmann, Alfred Albert	N.Y.
Tennant, William Samuel, Jr.	S.C.	B.S. 1941, New York University	
A.B. 1948, The Citadel		Tilly, James Lewis	Colo.
Terry, George Mulford	Md.	Townsend, Robert Arnold	Va.
A.B. 1947, The George Washington University		B.S. 1943, Harvard University	
Thackston, Carl Richard	S.C.	Travastini, Vincent D.	Va.
A.B. 1940, Furman University		Traynor, Raymond Patrick	Ohio
Theobald, Frederick H.	Ky.	B.S. 1948, John Carroll University	
Theophilos George John	D.C.	Treadway, Leon Wesley	Va.
Therault, Rene John	D.C.	Treumann, Walter	Mo.
Thomas, Arthur Russell	D.C.	A.B. 1946, Washington University	
B.S. in M.E. 1946, Virginia Polytechnic Institute		A.M. 1948, University of Chicago	
Thomas, Earl Arunah	D.C.	Triviz, Edward Ernest	N.M.
A.B. 1949, The George Washington University		A.B. 1943, New Mexico College of Agriculture and Mechanic Arts	
Thomas, Eugene Bray, Jr.	Conn.	Tuchmann, Norman	Conn.
A.B. 1943, Wesleyan University		A.B. 1948, The George Washington University	
LL.B. 1949, University of Virginia		Tucker, Lyman Ray	Tex.
Thomas, Frano V.	Fla.	A.B. 1949, The George Washington University	
A.B. 1943, The George Washington University		Tucker, Ralph M.	Nev.
Thomas, Gregory	Md.	Tull, Robert Lewis	D.C.
Thomas, Ralph Leslie	Fla.	A.B. 1949, The George Washington University	
B.E.E. 1947, University of Louisville		Tully, John Montgomery	W.Va.
		Tupman, Wilbur Crandell	D.C.
		B.I.E. 1949, Georgia Institute of Technology	
		Turkal, Donal Lloyd	Md.
		Turner, Clarence William, Jr.	D.C.
		B.S. in M.E. 1947, Purdue University	

Turrou Edward Arnold A.B. 1942, LL.B. 1948, The George Washington University	Va.	Waldron, Richard Vernell B.S. in Ed. 1938, Southern Illinois Norman University	Ill.
Tzarnes, Christ A.B. 1948, The George Washington University	D.C.	Walker, Dale Bryan Wallick, Robert Daniel B.S. in E.E. 1948, B.S. in B.A. 1949, Lehigh University	N.M. D.C.
U			
Umstead, Lyman John A.B. 1948, The George Washington University	Pa.	Walsh, James Franklin B.S. 1946, University of Illinois	D.C.
Unkenholz, Willard Clifton B.M.E. 1948, College of the City of New York	D.C.	Waltling, Paul John A.B. 1949, Pennsylvania State College	Pa.
Ussery, Harry McRae	Va.	Walton, Herbert James A.B. 1948, John B. Stetson University	Va.
Uzzell, Edward Foy, Jr. B.S. 1949, University of North Carolina	N.J.	Wambach, Richard F. A.B. 1948, Duke University	N.D.
V			
Vaccaro, Camillo Jimmie, Jr. Vache, Barbara Marie A.B. 1949, The George Washington University	D.C. Ohio	Warmack, William Davies Warner, Brainerd Henry B.E.E. 1946, Yale University	D.C. Md.
Valenzi Joseph Thomas Valler, Horace Joseph, Jr. B.S. 1948, Hobart College	N.Y. N.J.	Warner, Joan Carol B.S. 1943, Duquesne University	D.C.
Vance, Henry Breckinridge A.B. 1948, Washington and Lee University	Md.	Warner, Philip Lambert A.B. 1948, American University	Va.
Vance, John Thomas A.B. 1947, Montana State University	Md.	Washington, Fielding Lewis LL.B. 1949, The George Washington University	Va.
Vandermause, Orville Joseph B.S. in Ed. 1941, Whitewater State Teachers College, Wis.	D.C.	Watanabe, Kazuo A.B. 1948, University of Hawaii	Hawaii
Van Deusen, John Ten Eyck A.B. 1948, Brown University	D.C.	Watkins, William Henry B.S. 1940, University of Maryland	D.C.
Van Meter, Ellsworth Evans A.B. 1942, Indiana University	Va.	LL.B. 1949, The George Washington University	
Varnoucos, Paul George Vass Richard Branson A.B. 1949, The George Washington University	Va. D.C.	Wayland, Clarence Raymond Weare, George Cabot A.B. 1949, University of Maryland	Va. D.C.
Venables Harry Robert A.B. 1948, University of Maryland	Md.	Weaver, Douglas Price A.B. 1948, The George Washington University	D.C.
Vidmar, Joseph Ernest A.B. 1938, New York State College for Teachers, Albany, N. Y.	N.Y.	Weaver, Gilbert Earl A.B. 1948, Lenoir-Rhyne College	N.C.
B.S. in L.S. 1940, Louisiana State University		Webb, Jack Bassett A.B. 1948, University of Kansas	Mo.
Villalon, Edward Gonzales Villedaise, Jean Andre Doctor of Laws 1947, University of Paris	D.C. D.C.	Webb, Joseph Coates, Jr. A.B. 1948, The George Washington University	D.C.
Vinciguerra, John Vincent A.B. 1946, University of Akron	Ohio	Weber, Edward Robert B.S. 1940, LaCrosse College B.B.A. 1948, University of Wisconsin	Wis.
Vitale, Michael Joseph	N.J.	Webster, Edward B.S. 1942, University of Maryland	Md.
Vogel, Ralph Henry B.S. 1946, Harvard University	Calif.	Webster, John M. B.S. 1942, University of Minnesota LL.B. 1947, The George Washington University	D.C.
W			
Wacker, Stella Cruba A.B. 1937, Ohio State University	Md.	Weed, Norman Broadwell A.B. 1948, Stanford University	D.C.
Waddingham, Albert Thorpe Wadsworth, James Leo A.B. 1948, Brigham Young University	Utah Nev.	Weine, Allen Gardner B.S. 1948, The George Washington University	Md.
Wagman, Theodore David A.B. 1939, A.M. 1940, Boston University	Mass.	Weissman, Milton B.Ch.E. 1939, New York University	N.Y.
		Weker, Simon Louis A.B. 1934, Harvard College M.S. in Ed. 1938, Boston University	Mass.
		Welch, June R. Wellington, Peretz A.B. 1950, The George Washington University	Tex. N.Y.
		Wendt, Carl Morten A.B. 1937, A.M. 1939, University of South Dakota	Iowa
		Wendt, Lucile Burd A.B. 1942, University of South Dakota	S.D.

West, George Bruce A.B. 1949, Washington and Lee University	Md.	Williams, Henry Newton B.S. 1917, Middle Tennessee State College	Tenn.
West, Luther Charles A.B. 1948, Birmingham Southern College	Ala.	A.M. 1938, University of Tennessee	N.D.
Weston, Glen Earl B.S. 1943, University of Maryland	Md.	Williams, John Charles Williams, John Marshall	D.C.
LL.B. 1948, The George Washington University		B.S. 1916, Eau Claire State Teachers College, Wis.	Va.
Wetherbee, Fairland Henry	Md.	Williams, Lawrence Harvey	
Wharry, Llewellyn Russell	Ill.	B.S. 1947, University of Minnesota	
A.M. 1936, State University of Iowa	Ill.	LL.B. 1948, University of Colorado	Md.
Wharton, Richard Henry	Ohio	Williams, Leonard John	Va.
B.S. 1933, University of Dayton		Williamson, Daniel Lester, Jr.	Tenn.
M.S. 1946, Ohio State University		Williamson, John George	
Wheatley, Andy Clarence	Va.	A.B. 1948, The George Washington University	
A.B. 1940, Trinity University		Wilson, Arrah Miner	S.C.
Wheeler, Arthur Adrian	Mass.	A.B. 1945, University of South Carolina	
Wheeler, Mary Starr	Conn.	LL.B. 1948, University of Virginia	W.Va.
A.B. 1916, Wellesley College		Wilson, Howard Owen	D.C.
LL.B. 1949, The George Washington University		Wilson, Leo Earl	
Whitaker, Edward Stephen	Tenn.	B.S. in E.E. 1948, Carnegie Institute of Technology	
A.B. 1942, King College		Wilson, Leonard Merle, Jr.	D.C.
White, Alfred Lawson	D.C.	A.B. 1940, West Virginia University	
White, Everett Edward	N.Y.	Wilson, Paul Grier	Va.
A.B. 1918, Dartmouth College		A.B. 1950, University of Maryland	
White, Joseph Hill	Va.	Wilson, Philip Harold	Ill.
A.B. 1948, American University		B.S. in Ed. 1940, Illinois State Normal University	
White, Robert Bellarmine	D.C.	Wing, Robert Claude	Maine
White, Robert Lynn	W.Va.	B.S. 1935, United States Naval Academy	
B.S. 1947, Marietta College		M.B.A. 1930, Harvard University	
Whitener, Thomas Grady	Md.	Winkelman, Frederick William	N.Y.
Whitesel, James Warren	D.C.	J.D. 1937, University of Gottingen, Germany	
A.B. 1943, Wake Forest College		Witoff, Sheldon William	D.C.
J.D. 1948, The George Washington University		B.S. 1949, University of Maryland	
Whiting, Donald Oren	D.C.	Withers, John Lewis	N.C.
A.B. 1940, University of Minnesota		B.S. 1940, Davidson College	
Whitmore, Charles Warren	Va.	A.M. 1941, University of North Carolina	
M.D. 1947, University of Virginia		Witherspoon, Fred Lee, Jr.	Md.
Whitmore, Daniel Norman	Nev.	B.S. in M.E. 1941, University of Maryland	
Whitmore, Sidney Roxton	D.C.	Wohlleben, William McNulty	N.Y.
Whitney, George Ward	N.Y.	B.M.E. 1942, Clarkson College of Technology	
B.E.E. 1940, Rensselaer Polytechnic Institute		Wolfarth, Carlton H.	D.C.
Whittenburg, John Verner	Tex.	A.B. 1950, The George Washington University	
B.S. in Ch.E. 1948, Rice Institute		Wolfarth, Charlene D.	Colo.
Whitwell, Sanford MacCallum	Pa.	A.B. 1945, The George Washington University	
B.S. 1940, Cornell University		Wolfenson, Jay Warren	D.C.
Whitworth, Lewis Beaman	Md.	A.B. 1948, The George Washington University	
Wichin, Ernest Aaron	N.Y.	Wolfe, Lenard Lee	Pa.
B.B.A. 1942, College of the City of New York		A.B. 1948, The George Washington University	
M.B.A. 1945, New York University		Wolk, Morris O.	Md.
Wicker, George Stanley	Ga.	B.S. 1936, Cooper Union	
A.B. 1930, Emory University		Wolk, Reuben	Calif.
Widman, Charles Louis	D.C.	B.S. 1918, University of Maryland	
Widmann, John William	Pa.	Wolman, Harold	N.Y.
B.S. 1940, Villanova College		B.S. 1942, College of the City of New York	
Wier, Richard Austin	Tex.	Wong, Wing	N.H.
B.B.A. 1945, University of Texas		LL.B. 1949, The George Washington University	
Wiley, Earl Brooks	Ga.		
A.B. 1940, The George Washington University			
Wilkins, Don Frank	Utah		
Willett, John Raymond	Maine		
A.B. 1948, The George Washington University			

Wood, Charles William	Pa.	Y	
LL.B. 1949 The George Washington University		Yabroff, Bernard	Va.
Wood, Harry Eugena	S.C.	B.S.S. 1930, College of the City of New York	
Wood, Thomas Bennett	Ill.	Yadao, Elias Perfecto	Hawaii
Woodard, Calvin	N.C.	A.B. 1949, University of Hawaii	
A.B. 1949, University of North Carolina		Yarnoff, Leroy Mills	D.C.
Woodbury, Wallace Richards	Utah	Yavener, Burton	N.J.
A.B. 1947, University of Utah		Yavil, Minnie	Pa.
Woodhouse, Margaret Wark	Conn.	B.S. 1937, Temple University	
A.B. 1946, University of North Carolina		A.M. 1949, The George Washington University	
Woodhull, John Hawley	D.C.	Yeager, Philip Brand	Va.
B.S. in E.E. 1943, Tufts College		A.B. 1930, University of Arizona	
Woodling, Francis Albert	Pa.	Yim, William Harry	Hawaii
A.B. 1946, The George Washington University		A.B. 1949, University of Hawaii	
Woodmansee, Charles H.	Md.	Yokley, William Ross, Jr.	Ky.
Woods, John George	Va.	Yorty, Robert Bell	Nev.
A.B. 1943, Centenary College		Young, Charles Cooper	Colo.
LL.B. 1949, Georgetown University		LL.B. 1926, University of Denver	
Woods, Robert Ora	Calif.	Young, David	N.Y.
Woodworth Howard Hampton	Md.	B.M.E. 1949, Cooper Union	
B.S. 1943, University of Minnesota		Young, Jack Martin	Ohio
Woolis, William Pape	Va.	B.S. 1943, Case Institute of Technology	
Worley, Richard Bryce	Okla.	Young, Maynard Fling	W.Va.
Wortman, David Morris	D.C.	Yount, Joseph Herman, Jr.	Ohio
A.B. 1948, The George Washington University		A.B. 1948, Oberlin College	
Wray, James Laban	Ark.		
Wright, Berkeley	D.C.	Zabiegalski, Anthony, Jr.	Pa.
Wright, Dale Alan	Tex.	A.B. 1949, Bucknell University	
B.S. 1948, Carnegie Institute of Technology		Zablocki, Clement John	Wis.
Wyatt, John Walton	Fla.	Ph.B. 1936, Marquette University	
B.S. 1938, Troy State Teachers College, Ala.		Zachary, Richard Eugene	D.C.
LL.B. 1947, University of Florida		Zaskalicky, Julius John	Conn.
Wyche, Benjamin Walker	Va.	B.E.E. 1942, Yale University	
B.S. 1943, Virginia Polytechnic Institute		Zazetaki, Henry Bernard	Pa.
Wyche, Richard T.	Okla.	A.B. 1949, Pennsylvania State College	
A.B. 1938, University of Oklahoma		Zbylut, Chester Anthony	Ill.
Wyman, Alexander	D.C.	A.B. 1940, DePaul University	
B.S. in Ch.E. 1935 Cooper Union		Zeidner, Philip M.	N.Y.
Wymore, Max Lee	Kans.	Zellers, Robert Adam	Fla.
B.S. in Ch.E. 1947, University of Kansas		LL.B. 1949, John B. Stetson University	
		Ziehl, Wilbur H.	Md.
		Zitomer, Joseph	D.C.
		Zuckerman, Martin Jay	N.J.
		Zuppas, Simos	D.C.
		LL.B. 1938, University of Athens, Greece	

SUMMARIES OF REGISTRATION

SUMMER TERM 1949

FALL AND WINTER TERMS 1949-50

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

United States, Territories, and Possessions

Alabama	17	Nevada	15
Arizona	3	New Hampshire	5
Arkansas	10	New Jersey	58
California	26	New Mexico	8
Colorado	9	New York	204
Connecticut	28	North Carolina	34
Delaware	1	North Dakota	5
District of Columbia	582	Ohio	54
Florida	21	Oklahoma	21
Georgia	13	Oregon	5
Idaho	6	Pennsylvania	130
Illinois	47	Rhode Island	14
Indiana	21	South Carolina	12
Iowa	16	South Dakota	7
Kansas	12	Tennessee	21
Kentucky	13	Texas	33
Louisiana	6	Utah	8
Maine	6	Vermont	5
Maryland	252	Virginia	287
Massachusetts	44	Washington	13
Michigan	17	West Virginia	43
Minnesota	14	Wisconsin	15
Mississippi	11	Wyoming	6
Missouri	22	Alaska	2
Montana	6	Hawaii	17
Nebraska	10	Puerto Rico	2

Foreign Countries

Belgium	1	Germany	1
Colombia	1	Netherlands	1
Cuba	2		

GRADUATES OF COLLEGES REGISTERED IN THE LAW SCHOOL

Agnes Scott College	1	Allegheny College	3
Akron, University of	2	Alma College	1
Alabama, University of	12	American University	12
Alabama Polytechnic Institute ...	1	Amherst College	7
Alabama State Teachers College,		Amsterdam, University of	1
Troy	1	Arizona, University of	2
Albany Law School	1	Arkansas, University of	3

Athens, University of, Greece ...	1	Dartmouth College	5
Augustana College	1	Davidson College	5
Baylor University	2	Dayton, University of	1
Belgrade, University of	1	Denison University	1
Berea College	1	Denver, University of	5
Berlin, University of	1	DePaul University	4
Bethany College	1	De Pauw University	1
Birmingham-Southern College ...	1	Detroit, University of	2
Boston College	2	Dickinson College	1
Boston University	5	Drake University	1
Bowdoin College	3	Drexel Institute of Technology..	3
Bowling Green State University..	1	Drury College	1
Bradley University	1	Dubuque, University of	1
Brenau College	1	Duke University	17
Brigham Young University	3	Duquesne University	1
Brooklyn, Polytechnic Institute of	1	Earlham College	1
Brooklyn College	15	East Tennessee State College	2
Brown University	9	East Texas State Teachers College	1
Bryn Mawr College	1	Eastern Illinois State College	1
Bucknell University	7	Emory and Henry College	3
Buffalo, University of	3	Emory University	3
Butler University	2	Evansville College	1
California, University of	5	Fairmont State College	1
California at Los Angeles, Univer-		Farmville State Teachers College,	
sity of	6	Va.	1
California Institute of Technology	2	Fenn College	1
Canisius College	1	Florida, University of	8
Carleton College	1	Florida Southern College	2
Carnegie Institute of Technology..	6	Florida State University	1
Case Institute of Technology	4	Fordham University	2
Catholic University of America...	10	Franklin and Marshall College ...	5
Centenary College	1	Furman University	2
Central College, Mo.	1	Gannon College	1
Central State College	1	George Peabody College for Teach-	
Central State Teachers College,		ers	1
Wis.	1	George Washington University, The	336
Centre College	1	Georgetown University	42
Charleston, College of	1	Georgia, University of	3
Chicago, University of	7	Georgia Institute of Technology..	7
Chattanooga, University of	1	Gettysburg College	5
Cincinnati, University of	1	Göttingen, University of, Germany	1
Citadel, The	3	Goucher College	1
Clark University	5	Grove City College	2
Clarke College	1	Guilford College	1
Clarkson College of Technology..	2	Gustavus Adolphus College	1
Clemson College	2	Hampden-Sydney College	2
Cleveland-Marshall Law School ..	1	Hanover College	1
Coe College	1	Harvard University	33
Colgate University	3	Havana, University of	2
Colorado, University of	2	Haverford College	1
Columbia University	16	Hawaii, University of	7
Concordia College	1	High Point College	1
Connecticut, University of	2	Hobart College	1
Cooper Union	7	Hollins College	1
Cornell University	22	Holy Cross, College of the	2

Howard Payne College	1	Michigan, University of	17
Hunter College	2	Michigan State College	5
Idaho, University of	4	Middle Tennessee State Teachers College	1
Illinois, University of	16	Middlebury College	1
Illinois Institute of Technology..	5	Milan State University	1
Illinois State Normal University..	1	Millsaps College	1
Immaculate Heart College	1	Minnesota, University of	12
Indiana State Teachers College, Pa.	1	Mississippi, University of	1
Indiana University	8	Missouri, University of	11
Iowa, State University of	11	Montana State University	4
Iowa State College of Agriculture and Mechanic Arts	1	Morris Harvey College	1
James Millikin University	1	Mount St. Mary College	2
Jamestown College	1	Mount St. Mary's College	1
Javcriana, University of	1	Mount Union College	2
John B. Stetson University	3	Muhlenberg College	5
John Carroll University	2	National University	1
Johns Hopkins University	5	Nebraska, University of	7
Kalamazoo College	1	Nevada, University of	1
Kansas, University of	9	Newark, University of	1
Kansas State College	3	Newark College of Engineering..	1
Kent State University	2	New Hampshire, University of..	6
Kentucky, University of	4	New Jersey State Teachers Col- lege, Montclair	1
King College	1	New Mexico, University of	1
Knox College	1	New Mexico College of Agriculture and Mechanic Arts	2
LaCrosse College	1	New York, College of the City of	51
Lafayette College	6	New York State Teachers College, Albany	2
Lehigh University	4	New York State Teachers College, Buffalo	2
Leiden University	1	New York University	19
Lenoir-Rhyne College	3	Niagara University	1
Liege, University of	1	North Carolina, University of ...	21
Lincoln Memorial University	1	North Carolina College at Durham	1
Long Island College of Medicine	1	North Carolina State Teachers College	1
Louisiana Polytechnic Institute..	1	North Dakota State Teachers Col- lege	2
Louisiana State University	7	North Illinois State Teachers Col- lege	1
Louisville, University of	4	North Texas State Teachers Col- lege	1
Loyola University	1	Northeastern University	8
Lynchburg College	2	Northwestern University	4
Maine, University of	2	Norwich University	1
Major College of the Rosary, Bo- gotá, Colombia	1	Notre Dame, University of	6
Mansfield State Teachers College.	1	Oberlin College	3
Marietta College	3	Ohio State University	8
Marquette University	2	Ohio University	2
Marshall College	7	Oklahoma, University of	8
Mary Washington College	1	Oklahoma Agricultural and Me- chanical College	5
Maryland, University of	67	Oklahoma City University	1
Maryville College	1		
Massachusetts, University of	1		
Massachusetts Institute of Tech- nology	9		
Massachusetts State College	1		
Mexico, National University of...	1		
Miami, University of	1		
Miami University	6		

Oregon, University of	3	Southwest Texas State Teachers College	1
Oxford University	1	Southwestern University	1
Paris, University of	1	Spring Hill College	1
Pavia State University	1	Stanford University	4
Peca, University of	1	Stephen F. Austin State Teachers College	1
Pennsylvania University of	16	Stevens Institute of Technology..	3
Pennsylvania State College	23	Susquehanna University	1
Phillips University	1	Swarthmore College	1
Pittsburgh, University of	8	Syracuse University	12
Poznan, University of, Poland ..	2	Szeged, University of, Hungary..	1
Prague, University of	1	Temple University	8
Presbyterian College	3	Tennessee, University of	4
Princeton University	7	Texas, Agricultural and Mechanical College of	1
Providence College	2	Texas, University of	9
Puerto Rico, University of	2	Texas Christian University	2
Puget Sound, College of	1	Texas College of Mines	2
Purdue University	16	Texas State College for Women..	1
Queens College	2	Thiel College	1
Radcliffe College	1	Toledo, University of	2
Randolph-Macon Woman's College	2	Transylvania College	1
Rensselaer Polytechnic Institute..	13	Trinity College	5
Rhode Island College of Education	1	Trinity University	1
Rhode Island State College	2	Tufts College	9
Rice Institute	4	Tulane University	4
Richmond, University of	5	Tulsa, University of	1
Roanoke College	2	Union College	2
Rochester, University of	7	United States Coast Guard Academy	7
Roosevelt College	1	United States Military Academy..	6
Rose Polytechnic Institute	2	United States Naval Academy..	15
Rutgers University	8	Uppsala College	1
St. Ambrose College	1	Utah, University of	4
St. Bonaventure College	1	Utrecht, University of	1
St. Francis College	1	Vanderbilt University	2
St. John's College	2	Vassar College	2
St. John's University, N. Y.	1	Villanova College	2
St. John's University, Shanghai..	1	Virginia, University of	22
St. Louis University	1	Virginia Military Institute	4
St. Martin College	1	Virginia Polytechnic Institute ...	11
St. Paul College of Law	1	Wake Forest College	1
St. Peter's College	1	Washington, State College of	3
Salem College	1	Washington, University of	7
Scranton, University of	1	Washington and Jefferson College	2
Seton Hall College	5	Washington and Lee University..	11
Shepherd College	1	Washington College of Law	1
Shorter College	2	Washington University	4
Siena College	1	Wayne University	3
Smith College	1	Waynesburg College	1
South Carolina, University of ...	9	Wellesley College	3
South Dakota, University of ...	4	Wesleyan University	4
Southeastern Louisiana College ..	1	West Virginia University	21
Southern California, University of	1		
Southern Illinois Normal University	1		
Southern Methodist University..	2		
Southwest Missouri State College	1		

Western Kentucky State Teachers College	1	Wisconsin State Teachers College, Whitewater	2
Western Maryland College	3	Wittenberg College	1
Western Reserve University	4	Wooster, College of	2
Western State College of Colorado	1	Worcester Polytechnic Institute..	5
Wheaton College, Ill.	2	Wyoming, University of	2
Wichita, Municipal University of.	4	Xavier University	1
Wilkes College	3	Yale University	20
William and Mary, College of ...	4	Yankton College	2
William Jewell College	1		
Wilson College	1		
Wisconsin, University of	11	Number of college graduates	1,519
Wisconsin State Teachers College, Eau Claire	1	Number of colleges represented	340

SUMMARY OF REGISTRATION

1949-50

	Men	Women	Total
First year	860	63	923
Second year	543	30	573
Third year	448	18	466
Candidates for the degree of Master of Laws	202	4	206
Candidates for the degree of Master of Comparative Law	16	2	18
Candidates for the degree of Doctor of Juridical Science	12	0	12
Unclassified	43	1	44
Total	2,124	118	2,242

INDEX

- Academic status of the University, 5-6
- Administration, officers of, 4
- Admission, 18-20
- Advanced standing, 19-20
- Attendance, 23
- Bachelor of Laws, degree of, 18-19, 27-28
- Calendar of the School, 1950-51, vi
- Classification of students, 25
- Committees of the Faculty, 15
- Course numbers, explanation of, 33
- Courses of instruction, 31-39
- Dean's Council, 15
- Degrees, 27-30
 - Conferred, 1949-50, 40-47
 - In the graduate course, 28-29
 - In the professional course, 26-28
- Doctor of Juridical Science, degree of, 19-20, 29-30
- Emeritus professors, 9
- Employment, student, 26
- Examinations, 24
- Exclusion and probation for poor scholarship, 25
- Faculty, 9-15
- Fees and financial regulations, 20-22
- Geographical distribution of students, 81
- Grades, 24
- Graduates of colleges registered in the School, 81-85
- Health Administration, 26-27
- History of the University, 5
- Honors, 29
- Hours of instruction, 33
- Juris Doctor, degree of, 19, 28-29
- Law Review*, 15
- Library, 15
- Living accommodations, 25-26
- Loan funds, 23
- Master of Comparative Law, degree of, 19, 29
- Master of Laws, degree of, 19, 29
- Order of the Coif, 18
- Placement Office, 26, 27
- Prizes, 22-23
- Refund of tuition, 21
- Registration, 20
- Registrations in the School, number of, 85
- Regulations, 23-25
- Residence halls, 25-26
- Residence requirements, 23-24, 27-28, 29
- Right to drop students, 25
- Scholarship, 18, 19, 28, 29, 30
- Scholarships, 22
- Student:
 - Bar Association, 17
 - Fee, 20
 - Employment, 26
 - Life, 25-27
- Students registered, 1949-50, 48-80
- Summaries of registration, 81-85
- Trustees, Board of, 3
- Unclassified students, 20
- University:
 - Academic status, 5
 - Colleges, Schools, and Divisions, 5
 - History, 5
 - Location, 6
- Withdrawals and refunds, 21-22

THE SCHOOL OF MEDICINE

1950-51

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CITY OF
NEW YORK

FROM THE
FUND OF THE

NEW YORK
HISTORICAL SOCIETY

NEW YORK
1854

CONTENTS

Calendar of the School of Medicine.....	vi
The Board of Trustees.....	1
Officers of Administration.....	2
Faculty and Staff of Instruction in Medicine.....	3
Assistants in Research and Instruction.....	24
Technical Assistants	26
Administrative Assistants	26
The School of Medicine.....	27
Courses of Instruction.....	42
Anatomy	43
Anesthesiology	44
Bacteriology, Hygiene, and Preventive Medicine.....	45
Biochemistry	47
Dermatology and Syphilology.....	48
Medicine	49
Military Science and Tactics.....	54
Neurology and Neurological Surgery.....	55
Obstetrics and Gynecology.....	57
Ophthalmology	60
Oto-rhino-laryngology	61
Pathology	62
Pediatrics	63
Pharmacology	65
Physical Medicine	66
Physiology	67
Psychiatry	69
Radiology	71
Surgery	72
Urology	75
Degrees Conferred, June 1, 1949.....	76
Students Registered, 1949-50.....	77
Summaries of Registration, 1949-50.....	83

CALENDAR OF THE SCHOOL OF MEDICINE

1950-51

Date	Day	Occasion
1950:		
Sept. 12	Tuesday	Reexaminations
Sept. 14 and 15....	Thursday and Friday...	Registration period for the academic year 1950-51
Sept. 18	Monday	Academic year begins
Nov. 11	Saturday	Armistice Day. Holiday
Nov. 23-25	Thursday through Sat- urday	Thanksgiving recess
Dec. 22-Jan. 2....	Friday through Tuesday.	Christmas recess
1951:		
Jan. 19-27	Friday through Saturday.	Fall term examination period
Jan. 29	Monday	Classes resume for the winter term
Feb. 22	Thursday	Winter Convocation. Holiday
March 23 and 24..	Friday and Saturday ...	Easter recess
April 30	Monday	Last day for applications for degrees to be conferred in May
May 17-25	Thursday through Friday.	Winter term examination pe- riod
May 27	Sunday	Baccalaureate Sermon
May 30	Wednesday	Commencement

THE BOARD OF TRUSTEES

The Board of Trustees of the University is composed of the President and Vice-President of the University ex officio and the following persons by election:

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Lloyd Bennett Wilson

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GENERAL INFORMATION

INTRODUCTORY

The School of Medicine of The George Washington University was opened in March 1825; of the medical schools now in existence in the United States, it is the eleventh in chronological order of founding. The University Hospital and Dispensary were established in 1898 and made a part of the organization of the School.

The School is a member of the Association of American Medical Colleges and is one of the medical colleges which have been designated continuously as "class A" by the American Medical Association. The degrees of the School of Medicine are recognized by all state examining boards.

PLAN OF INSTRUCTION

The work of the School is organized under the following departments: Anatomy; Anesthesiology; Bacteriology. Hygiene, and Preventive Medicine; Biochemistry; Dermatology and Syphilology; Medicine; Military Science and Tactics; Neurology and Neurological Surgery; Obstetrics and Gynecology; Ophthalmology; Oto-rhino-laryngology; Pathology;

Pediatrics; Pharmacology; Physical Medicine; Physiology; Psychiatry; Radiology; Surgery; and Urology.

The salient features in the method of instruction are thorough laboratory training, demonstrations, and clinical teaching, with recitations and lectures to clarify the many problems presented. Courses of clinical instruction are included in the announcements of the clinical departments. The clinical material in the various hospitals and outpatient departments is utilized to the fullest extent for both clinical instruction and laboratory work.

Each of the first three years of the medical curriculum is divided into two terms of sixteen weeks. The senior year includes, in addition, an eight-week summer term. One half of the senior class will begin the summer term immediately upon completion of the junior year; the other half will begin eight weeks later. Within certain limitations, the students may elect the period of attendance and the service of their assignment. There will be no formal classes or examinations during this period.

EQUIPMENT AND FACILITIES

The George Washington University Hospital.—The hospital, with a capacity of 400 beds, was opened in 1918. This splendid edifice, which is one of the outstanding hospitals in the United States, is completely furnished with the latest and most scientific apparatus and equipment. Its purpose is to supplement existing hospital resources in the District of Columbia for the care of the sick and the injured; the education of physicians, nurses, and technicians; and the advancement of medical knowledge.

The hospital is staffed and controlled by the Faculty of the George Washington University School of Medicine and it provides excellent clinical material for the instruction of medical students. Virtually every specialty in the fields of medicine and surgery has assigned space and equipment in both the outpatient department and the bed-patient section of this modern institution.

Medical School Building.—The building housing the School of Medicine is a five-story structure with lecture rooms and classrooms, laboratories, and students' rooms.

Laboratories.—A four-story laboratory building is adjacent to the main medical building. The major laboratories are for anatomy, histology and embryology, bacteriology, hygiene and preventive medicine, biochemistry, pathology, pharmacology and physiology, and clinical microscopy. They are fully equipped to enable students to pursue adequately the laboratory courses and to acquire the technical skill necessary in modern clinical and investigative work.

Research Building.—The Research Building houses the George Wash-

ington University Cancer Clinic and special laboratories concerned with the biochemical, physiological and cytological aspects of cancer research; the surgical and anesthesia research laboratories; a laboratory for radio-isotope investigation; and research laboratories of the Physiology, Neurology and Cardiovascular departments.

Medical Library.—The Medical Library contains a selected reference collection of more than 10,000 volumes, currently obtains important new medical works, and regularly receives the principal medical journals.

Inter-library loan service is maintained by close cooperation with other medical and scientific libraries throughout Washington and vicinity.

The Medical Library is open from 9:00 A.M. to 9:00 P.M. each class day, Monday through Friday, and from 9:00 A.M. to 1:00 P.M. Saturday.

The Medical Library maintains a branch in Room 6037-A of the University Hospital for reference, research and inter-library loan service. It is open from 2:00 to 6:00 P.M. Monday through Friday.

GOVERNMENT LIBRARIES AND MUSEUMS

The Library of the Surgeon General's Office of the United States Army is the most complete general medical library in the world. In addition to its great collections of medical works, all leading medical periodicals of the world are available. This Library, as well as the Library of Congress, the Public Library, and the many excellent libraries of the various government departments, is available to students and teachers through a service maintained by the Medical School Library.

The Army Medical Museum affords opportunity for studying the conditions met in military and general medicine and surgery. Its collection of anatomical and pathological specimens is unequalled by any other museum in this country. The Museum of Hygiene, the National Museum, the Smithsonian Institution, the Botanic Gardens and the Department of Agriculture all afford opportunities for study in Medicine and its allied sciences.

CLINICS

The city of Washington, with about a million inhabitants, provides ample clinical material. The University Hospital and Outpatient Department furnish clinical facilities and a large proportion of the materials studied in the courses in pathology and clinical pathology.

The University Hospital.—All clinics are under the supervision of the Dean, who is also Medical Director of the Hospital. This insures the highest possible utilization of available clinical material for teaching purposes and the proper supervision of clinicians and students; it brings the individual student into direct contact with patients and requires him to do, under authoritative supervision, the clinical and laboratory work necessary for diagnosis and treatment; and it permits proper interpreta-

tion of the conditions occurring during the progress of cases and promotes the keeping of adequate records. Clinical and clinico-pathological conferences are held in which the history of cases, the physical findings, laboratory records, and the post-mortem pathology when available, are presented and correlated.

The Outpatient Department.—The Outpatient Department has clinical facilities for each Service in the Hospital. Fourth-year students are assigned in rotation by section for clinical instruction in the Outpatient Department.

Cancer Clinics.—The facilities of the Cancer Detection Clinic are available to medical students. In addition the diagnosis and treatment of various forms of neoplasms are presented. The results of the treatment of neoplasms are evaluated by follow-up studies.

The Helen L. and Mary E. Warwick Memorial, for cancer and allied diseases, was affiliated with The George Washington University in July 1948. The purposes of this clinic are (1) to provide care for cancer patients, through group consultations within a cancer organization, and (2) to provide training for physicians in the field of oncology.

Gallinger Municipal Hospital.—Clinical instruction is available in all branches of medicine. A great wealth of clinical material is afforded in this hospital and by ordinance of the municipal authorities of the District of Columbia, members of the Faculty of this School of Medicine, who are nominated by this University, are assigned approximately one-third of the patients for treatment and clinical study. Third-year students serve their clinical clerkships at this institution.

Childrens Hospital.—Clinical instruction in pediatrics, dermatology, and orthopedic surgery.

Emergency Hospital and Central Dispensary.—Clinical instruction in medicine, surgery, and the specialties.

St. Elizabeths Hospital.—Clinical instruction in mental and nervous diseases, medicine, post-mortem work, and gross pathology. This hospital with 6,577 beds, is maintained by the United States Government. The psychiatric clinic is one of the largest in the world.

Mt. Alto Hospital.—Clinical instruction in medicine and surgery is available and fourth-year students are assigned in rotation by sections for clinical clerkships.

Walter Reed General Hospital.—Clinical instruction is available in all branches of medicine and surgery. Fourth-year students are assigned in rotation by sections for clinical instruction.

ADMISSION

Ninety hours of credit applicable toward a degree in this University or another college of liberal arts and sciences are required for admission to the School of Medicine.

A credit hour represents one class hour or a minimum of two laboratory hours a week for a period of one term of approximately fifteen weeks.

SPECIFIC EDUCATIONAL REQUIREMENTS

Secondary School Requirements

Of the fifteen secondary school units required, three must be in English, two in one foreign language (ancient or modern), one in algebra, one in geometry, one in history, and one in science (biology, botany, chemistry, or physics). Eleven of the units offered must be in English, foreign language, mathematics, science, and history.

Premedical College Requirements

NINETY CREDIT HOURS

1. Chemistry, sixteen credit hours as follows: (a) eight credit hours in general inorganic chemistry of which at least four credit hours are laboratory work (qualitative analysis may be counted as general inorganic chemistry); (b) eight credit hours or a one-year college course of organic chemistry, including laboratory work.

2. Physics, eight credit hours, of which at least two credit hours are laboratory work. It is recommended that this course be preceded by one in trigonometry.

3. Biology, eight credit hours, of which at least four credit hours are laboratory work. This requirement may be satisfied by a course of eight credit hours in either general biology or zoology, or by four credit hours each in zoology and botany, but not by botany alone.

4. English composition and literature, six credit hours: the usual introductory college course or the equivalent. The student should develop facility in speaking and writing English.

5. Modern foreign language: a reading knowledge, preferably of French or German.

6. Electives. It is recommended that the remaining credit hours required include: (a) comparative vertebrate anatomy; (b) qualitative and quantitative chemical analysis; (c) social science and psychology.

ADVANCED STANDING

A student who has satisfactorily attended one or two years at any other "class A" medical school, and who has the necessary preliminary educational requirements, may be admitted to advanced standing.

APPLICATION FOR ADMISSION

1. Full directions for application will be furnished on request. The applicant should ask the registrar of each college previously attended to send an official transcript of record to the Director of Admissions, The George Washington University. Photostatic copies of credentials without the original signature of the certifying authority are not satisfactory. It is the responsibility of the applicant to see that all credentials are forwarded to the Admissions Office of the University.

2. A recent photograph, with signature, is required of each applicant.

3. As the number of qualified applicants for admission to the School each year far exceeds its capacity, the candidate for admission should secure from the colleges attended completely compiled premedical credentials and send them for evaluation well in advance of the term for which he is applying.

4. Applicants for admission are urged to take the Medical College Aptitude Test of the Association of American Medical Colleges.

5. A fee of \$3 to defray the costs of completing the records for final consideration for admission must accompany each application.

REGISTRATION

For the academic year 1950-51, registration will be conducted at the Medical School, 1335 H Street NW., from 2:00 to 4:00 p.m., September 14 and 15. Registration is for a period of one academic year.

FEES AND FINANCIAL REGULATIONS

The following fees have been adopted:

Tuition fee, for each academic year.....	\$650.00
Fee for special examinations, for each subject.....	5.00
Graduation fee	20.00

PAYMENT OF FEES

Fees for each term are \$325, payable in advance.

All fees are payable at the Office of the Cashier of the University, 725 Twenty-first Street NW. Fees due must be paid at the time of registration; no student is permitted to complete registration or to attend classes until fees are paid.

Registration in the School of Medicine is for a period of one academic year. After the student has entered the courses of instruction he is obligated for the full tuition for the academic year. No part of the tuition will be refunded upon withdrawal or dismissal for any cause. Acceptance by the School of a student's fees does not in any way obligate

the School to accept the student for any subsequent year, and the right is reserved to drop any student from the School whenever, in the interest of the student or the School, the Faculty deems it advisable to do so.

On account of the many applications for admission, and as the size of each class is limited, places can be reserved only for those qualified applicants who remit a deposit of \$100 which will be credited toward the tuition of the first term. Should unusual circumstances arise whereby the matriculant is unable to attend, this initial payment, less a charge of \$50 for registration, transfer, etc., will be returned up to one month before the opening of the session.

Students will be required to pay for injury to apparatus and other University property. All breakage and loss not directly traceable to an individual student are assessed pro rata. Each student is required, at the completion of laboratory courses, to replace or pay for all articles of equipment which he has lost, broken, or destroyed. Credit for work will not be given until this is done.

COST OF TEXTBOOKS AND STUDENT EQUIPMENT

The minimum cost of necessary textbooks and student equipment (microscope, drawing materials, glass slides, clinical thermometer, stethoscope, hemocytometer, etc.) is approximately as follows: first year, \$400; second year, \$250; third year, \$90; fourth year, \$80; total, \$820.

A fee of \$1 a term is charged for the use (optional) of a locker.

LOAN FUNDS

For information concerning loan funds consult the Chairman of the Committee on Student Loans and Scholarships, The George Washington University.

REGULATIONS

Students in the School of Medicine are subject to, and are expected to familiarize themselves with, the general University regulations stated in the University Catalogue.

ABSENCE

Absence is not allowed unless an excuse is obtained from the Dean or the instructor.

Absence consists in being away from a class or clinic during a scheduled period, entering after the class or clinic has begun, or leaving before either is dismissed.

Excuse for absence due to sickness must be accompanied by a certificate signed by the attending physician and must be filed in the Office of the Dean.

For every unexcused absence a department will deduct one-half of one per cent from the student's final grade in the subject involved.

GRADES

The following grading system is used: *A* (90-100); *B* (80-89); *C* (75-79); *D* (65-74) condition; *E* (below 64) failure; *Inc.*, incomplete. The passing grade in each subject is *C*.

A student who is conditioned in any subject will not be advanced until such condition is removed and then only by authority of the Committee on Scholarship. All conditions must be removed at the next make-up examination period provided for this purpose.

EXAMINATIONS

Examinations, which may be written, oral, or practical, will be held at the end of each term.

A student who fails to appear at a regularly scheduled final examination will not be examined until the next regular examination, except by special permission of the Committee on Scholarship. For make-up examinations to remove conditions, a fee of \$5 will be charged for each subject.

All students in the School of Medicine are required to take Part I and Part II of the National Board Examinations, except that students from those states and foreign countries which do not recognize the National Board may be exempted from Part II by action of the Committee on Scholarship.

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. It also provides first aid in the event of an emergency.

Medical privileges include: (1) the physical examination of all entering students; (2) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board, medicine, and nursing in the University Hospital for not more than two weeks during an academic year—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, two weeks) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of the University registration fee.

Students are allowed, if they so desire, to engage physicians and nurses

of their own choice, but when they do so they will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) students who have severed their connection with the University are ineligible for medical benefits.

PHYSICAL EXAMINATIONS *

All first-year students are given a comprehensive physical examination by the Department of Health Administration upon admission to the School of Medicine. The students are informed of the findings and advised regarding such measures as will tend to maintain a high standard of health.

In addition medical students benefit from the complete Tuberculosis Case Finding Program which the School has maintained since 1938-39. Under this program all students receive tuberculin tests, X-ray examinations, and such special attention from chest specialists as is necessary to reduce to a minimum the dangers from tuberculosis to which medical students are believed to be subject. Students are immunized against those diseases for which proven prophylactics exist.

AWARDS

John Ordronaux Prize.—This prize of \$70 is awarded annually to the member of the graduating class of the School of Medicine who has completed the four-year medical course with the highest scholastic standing.

Anna Bartsch Scholarship.—This scholarship, in the amount of \$500, established in 1946 by Dr. Anna Bartsch-Dunne as a memorial to her mother, Anna Bartsch, is awarded annually to a woman in the School of Medicine "of outstanding scholarship, character, and promise, who intends to make the practice of medicine her life profession."

Anna Bartsch Internship.—In memory of her mother, Anna Bartsch, Dr. Anna Bartsch-Dunne established in 1946 a fund to aid in the support of an internship. This aid, in the amount of \$15 a month, is awarded annually to a woman holding an internship in the University Hospital.

* A charge of \$2 is made if a student fails to appear for a physical examination during the period set for this purpose.

HONOR SOCIETIES

William Beaumont Medical Society.—Medical students showing unusual ability are elected by the active members of this society, which was founded to encourage and stimulate individual investigation.

Howard Kane-A. F. A. King Obstetrical Society.—The fifteen students in the third and fourth year classes who maintain the highest grades in their work in obstetrics are eligible for membership.

Smith-Reed-Russell Society.—Students of the third and fourth years who maintain a scholastic average of 86 per cent are eligible for associate membership.

RESERVE OFFICERS' TRAINING CORPS, U. S. ARMY, MEDICAL UNIT

A Medical Unit of the Reserve Officers' Training Corps is established in this School by authority of the Secretary of the Army, and an officer of the Medical Corps of the Army is detailed to the University for supervision and instruction of the unit.

The instruction is divided into two two-year courses, the basic and the advanced. Each course consists of 90 hours—58 hours of prescribed medical instruction given by the Medical School and 32 hours of military medical instruction. Students who satisfactorily complete the basic course may, up to the quota allowed by the Department of the Army, enter the advanced course. Students in the advanced course receive, from the Government, a stipend of approximately \$700.

Students in the advanced course are required to complete the course and to attend a summer training period of six weeks.

A student who successfully completes the course is recommended for a commission in the Medical Corps Reserve, if he desires appointment. It is the policy of the Department of the Army to give preference to graduates of this course in the selection for Army internship.

Membership in the Unit, which is voluntary, is open to any physically fit male student who is a citizen of the United States and who is, at the time of enrollment, within the following specified age limits: under 26 years of age for the basic course, under 29 for the advanced course. For veterans of World War II, there is no age limit until January 1, 1952, for the advanced course. Veterans with a minimum of six months' service receive credit for the first year of the basic course; those with a minimum of twelve months' service receive credit for both years of the basic course.

LIVING ACCOMMODATIONS

Women Students.—Women students under twenty-one years of age who are enrolled for twelve or more credit hours of academic work in the University must have their residences approved by the Director of

Activities for Women before their registrations can be completed. In the women's residence halls, single rooms are \$30 and \$35 a month; double rooms are \$23 and \$28 a month a person. Meals are served at the Student Union. Applications for rooms should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women.

Men Students.—Welling Hall provides double room facilities for 102 students. Dining facilities are available to all residents of this dormitory. Rooms rent for \$24 a month a person. Single and double rooms are provided for 203 students in Draper and Bradley Halls. These are temporary dormitories and residence is restricted to veterans of World War II who are enrolled for a minimum of twelve credit hours of academic work in the University. Single rooms are \$17 a month; double rooms are \$13 a month a person. The University maintains a limited number of temporary apartment units for married veteran students and their families subject to the same requirements for tenancy as above. Meals are served at the Student Union.

Application forms for reservations may be obtained from Director of Activities for Men, Building R.

Information concerning private rooming and boarding facilities near the University for women students twenty-one years of age or older and for men students may be obtained at the offices of the Director of Activities for Women and the Director of Activities for Men. The reservation of rooms in private houses must be made by students.

THE DEGREE OF DOCTOR OF MEDICINE

Upon the satisfactory completion of the requirements of the School of Medicine, the degree of Doctor of Medicine is conferred.

REQUIREMENTS FOR THE DEGREE

Every candidate for graduation with the degree of Doctor of Medicine must be at least twenty-one years of age, of reputable character, and free of all indebtedness to the University. He must have satisfied the admission requirements, completed satisfactorily not less than four academic years of study as a matriculated student in Medicine, completed all required courses, and passed satisfactorily all prescribed examinations.

COMBINED ARTS AND MEDICINE CURRICULUM

In order to be recommended for the degree of Bachelor of Arts, the candidate must complete at least ninety credit hours of prescribed college

work (at least thirty credit hours and one year of residence must be completed in Columbian College, the senior liberal arts college), and the first year of the medical curriculum. Upon satisfactory completion of the fourth year of the medical curriculum the student becomes eligible for the degree of Doctor of Medicine.

HONORS

A candidate who has completed the four-year medical course with an average grade of *A* may be recommended for graduation "with distinction."

INTERN AND RESIDENT TRAINING PROGRAM

The George Washington University offers twenty internships which are divided into two categories of ten straight medical and ten straight surgical. All interns, regardless of the Service to which they are assigned, will be given a period of training in obstetrics and gynecology.

Accredited resident training will be offered in Anesthesiology, Medicine, Neurology, Obstetrics and Gynecology, Ophthalmology, Oral Surgery, Pathology, Radiology, and Surgery.

POSTGRADUATE INSTRUCTION

The School of Medicine offers annually a series of short intensive postgraduate courses, varying somewhat from year to year. The series is designed for physicians in practice. The significant advances in the various specialties are presented, together with summaries of older information. A distinguished Guest Faculty supplements the Staff of the Medical School.

The Kellogg Medical Lectures, inaugurated in 1948, are a series of evening lectures and clinics, designed primarily for physicians practicing in Washington and vicinity. They are also attended by the Faculty, postgraduate students, and members of the senior class of the School of Medicine.

During the academic year 1948-49 approximately 500 physicians were enrolled in postgraduate courses. For application blanks and further information, address the Director of Post Graduate Instruction, 1335 H Street NW., Washington 5, D. C.

TECHNICIAN TRAINING COURSES

ORTHOPTIC TECHNICIAN TRAINING COURSE

A six-month course, of 675 hours of clinical and classroom work, is offered for the training of orthoptic technicians by the Department of Ophthalmology.

MEDICAL TECHNOLOGISTS COURSE

The course for medical technologists consists of twelve consecutive months of didactic and practical work in all phases of clinical laboratory technique. The course meets the full requirements of the Registry of Medical Technologists of the American Society of Clinical Pathologists. Prerequisites are 60 credit hours (two academic years) of college work including required credits in biology and chemistry.

Two classes are accepted each year, one entering in September and the other in February. Enrollment in each class is strictly limited so that personal instruction can be given.

Upon satisfactory completion of the course a certificate is awarded and the candidate is eligible for the certifying examination given by the Registry of Medical Technologists.

For application blanks and further information, address the Director of Laboratories, The George Washington University Hospital, Washington 7, D. C.

COURSES OF INSTRUCTION

On the following pages of this BULLETIN, under the alphabetically arranged names of the departments of instruction, are listed the courses of instruction offered by the School of Medicine. The courses here listed are subject to some slight change. The University reserves the right to withdraw any course announced.

EXPLANATION OF COURSE NUMBERS AND SYMBOLS

The number which precedes the name of a course indicates the term of the academic year in which the course is offered. An odd number indicates that the course is offered in the fall term; an even number, that it is offered in the winter term; and a double number (e.g., 343-44), that it begins in the fall term and continues in the winter.

A number in parentheses after the name of a nonprofessional course, indicates credit hours.

First-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and fourth-year courses, from 401 to 500.

ANATOMY

Warren Andrew, Ph.D., M.D., *Professor of Anatomy, Executive Officer*
 Ross Clayton MacCardle, Ph.D., *Professorial Lecturer in Anatomy*
 Webb Edward Haymaker, M.S., M.D., *Professorial Lecturer in Anatomy*

Paul Calabrisi, A.M., *Associate Professor of Anatomy*
 Ivor Cornman, Ph.D., *Assistant Research Professor of Anatomy*
 Merton Theodore Waite, M.D., *Instructor in Anatomy*
 Victor Henry Esch, M.D., *Instructor in Anatomy*
 Wilfred Walter Eastman, M.D., *Instructor in Anatomy*

101-2 *Gross Anatomy*

Calabrisi and Staff

Regional dissection of the human body supplemented with lectures and quiz sections. Study of X-ray anatomy to emphasize the functional aspects of the position, shape, and relation of the viscera and skeletal components. Eighteen hours a week, fall term; nine hours a week, winter term.

103 *Human Embryology*

Andrew and Staff

The origin and development of the human body. Special emphasis on the value of embryology in interpreting anatomical anomalies and variations as seen in gross dissection, surgery, obstetrics, and pathology. Three hours a week.

105 *Neuro-anatomy*

Haymaker and Staff

The macroscopic and microscopic study of the central nervous system and the special sense organs. Emphasis on such dynamic aspects as development, pathways, lesions, etc. Six hours a week.

106 *Microscopic Anatomy*

Andrew and Staff

Study of the detailed minute structure of cells, tissues, and organs of the human body with emphasis on the relation of structure to function. Recognition and interpretation of histological sections tested by practical examinations. Six hours a week.

201-2 *Seminar*

Andrew and Staff

Reports and discussions of special topics by the staff and graduate students. Regular medical students are encouraged to attend. One hour a week.

295-96 *Research*

Andrew and Staff

Hours and credits to be arranged.

299-300 *Thesis (3-3)*

The Staff

ANESTHESIOLOGY

Lloyd Harvey Mousel, M.S., M.D., *Professor of Anesthesiology*
 Donald Harrison Stubbs, A.M., M.D., *Clinical Professor of Anesthesiology*
 Charles Seymour Coakley, M.D., *Assistant Professor of Anesthesiology, Acting Executive Officer*
 William Eldridge Bageant, M.D., *Clinical Instructor in Anesthesiology*
 Allen Widome, M.D., *Clinical Instructor in Anesthesiology*
 Seymour Alpert, A.B., M.D., *Instructor in Anesthesiology*
 Charles Bernard Kabaker, A.B., M.D., *Fellow in Anesthesiology*

261 *Anesthesiology* The Staff
 Review of basic sciences and correlation between basic sciences and clinical work. One hour a week.

433-34 *Advanced Anesthesiology* The Staff
 Fourth-year students are rotated through the work of the department for a period of three weeks for two students and assigned to work in operating rooms, conferences, and seminars.

480 *Research* The Staff
 Hours to be arranged.

BACTERIOLOGY, HYGIENE, AND PREVENTIVE MEDICINE

Leland Wilbur Parr, Ph.D., *Professor of Bacteriology, Executive Officer*
Ralph Gregory Beachley, M.D., Dr.P.H., *Adjunct Professor of Public
Health Practice*

Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*

Mary Louise Robbins, Ph.D., *Assistant Professor of Bacteriology*

Lewis Walke McIlhany, M.S., M.D., *Clinical Instructor in Public
Health Practice*

William Gray McCarten, M.S., *Associate in Bacteriology*

Louis Joseph Michini, M.S., *Sanders Fellow in Bacteriology*

Janet Wilson Hartley, B.S., *Sanders Fellow in Bacteriology*

SEMINAR LECTURERS

Charles Armstrong, B.S., M.D., Sc.D., *Professorial Lecturer in Pre-
ventive Medicine*

Rolla Eugene Dyer, A.B., M.D., LL.D., *Professorial Lecturer in Pre-
ventive Medicine*

Royd Ray Sayers, A.M., M.D., *Professorial Lecturer on Industrial
Hygiene*

Sara Elizabeth Branham, Ph.D., M.D., Sc.D., *Professorial Lecturer in
Preventive Medicine*

Chester Wilson Emmons, Ph.D., *Professorial Lecturer on Medical My-
cology*

Willard Hull Wright, D.V.M., Ph.D., *Professorial Lecturer on Medical
Zoology*

John Roderick Heller, Jr., B.S., M.D., *Professorial Lecturer on Venereal
Disease Control*

Carl John Lauter, M.S., *Professorial Lecturer on Municipal Sanitation*

Robert Carter Cook, *Professorial Lecturer on Medical Genetics*

Robert Hanna Felix, M.D., M.P.H., *Professorial Lecturer on Mental
Hygiene*

112 General Bacteriology (4)

Robbins

A study of the fundamentals of bacteriology, including hygienic appli-
cations. Methods of cultivation and control of several groups of
microorganisms are studied in the laboratory. Prerequisite: any bio-
logical laboratory science; Chemistry 151-52. Laboratory fee, \$7.50.
Tues., Thurs., and Sat., 9:10 to 12:00 A.M.

- 209 *Medical Microbiology* (1-11) Parr, Griffin
Bacteria, rickettsia, viruses, yeasts, molds, protozoa, and metazoa which relate to the health and diseases of man—cultural study of most important forms; methods of diagnosis by microscopic, cultural, immunologic, and animal reactions; theory and methods of immunology; vaccines; serums; antibiotics. Open to suitably prepared graduate students; may be elected as a whole or in part by adding the appropriate letter to the course number, with credit allocated as follows: (a) *Bacteriology*, including rickettsia and viruses (7); (b) *Parasitology*, including medical mycology (3); (c) *Immunology* (1). Time to be arranged.
- 210 *Fundamentals of Epidemiology and Public Health* (2) Parr
Sources, modes, and implications of infection and injury. Prerequisite: *Bacteriology* 112 or 209. Mon., 2:00 to 4:00 P.M.
- 219-20 *Advanced Microbiology* Griffin and Staff
Special study of advanced methods and current problems in microbiology for suitably qualified students specializing in microbiology. Prerequisite: *Bacteriology* 112 or 209; Chemistry 151-52 or the equivalent; permission of the instructor. Time and credits to be arranged.
- 229 *Virus Techniques* (3) Robbins
Principal cultural and serological methods used in the study of viruses and rickettsiae. Prerequisite: *Bacteriology* 112 or 209 and permission of the instructor. Offered in 1950-51 and alternate years. Time to be arranged.
- 230 *Statistics in Microbiology* (3) Griffin
The application of statistical methods to the problems of microbiology. Prerequisite: entrance or elementary college algebra. Offered in 1951-52 and alternate years.
- 232 *Immunological Methods* (3) Griffin
Preparation and testing of serological materials. Demonstration of basic serological phenomena. Prerequisite: *Bacteriology* 112 or 209 and permission of the instructor. Offered in 1950-51 and alternate years. Time to be arranged.
- 295-96 *Research in Bacteriology* The Staff
Time and credits to be arranged.
- 299-300 *Thesis* (3-3) The Staff
- 305-6 *Staff Seminar* (1-1) The Staff
Bi-weekly throughout the year.
- 401-2 *Public Health Practice* (1-1) Beachley
Study of public health practice at national, state, city, and county levels. Public and private agencies. Sat., 10:00 A.M.
- 404 *Industrial Hygiene* (1) Sayers
For senior medical students and qualified graduate students. Lecture course dealing with the problems of health maintenance and disease prevention and cure as affected by industry. Time to be arranged.

BIOCHEMISTRY

Joseph Hiram Roe, Ph.D., *Professor of Biochemistry, Executive Officer*
 Arnold Kent Balls, Ph.D., *Professorial Lecturer in Biochemistry*
 William Henry Sebrell, Jr., M.D., *Professorial Lecturer on Nutrition*
 George Washington Irving, Jr., Ph.D., *Professorial Lecturer on Proteins*
 Bernard Leonard Horecker, Ph.D., *Professorial Lecturer on Enzymes*
 Carleton Raymond Treadwell, Ph.D., *Associate Professor of Biochemistry*

Mary Barbara Mills, Ph.D., *Assistant Professor of Biochemistry*
 Benjamin Williams Smith, B.S., M.S., *Instructor in Biochemistry*
 Charlotte Moorar Damron, M.S., *Teaching Fellow in Biochemistry*
 Eugene Worthington Rice, M.S., *Sanders Fellow in Biochemistry*
 Norman Clifford Kramer, M.S., *Sanders Fellow in Biochemistry*
 William James Canady, B.S., *Graduate Assistant in Biochemistry*

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|---------|--|----------------|
| 113-14 | <i>Biochemistry</i> | Roe and Staff |
| | Physiological and clinical chemistry for the first-year medical student. Two lectures and two three-hour laboratory periods a week. | |
| 221-22 | <i>Biochemistry (4-4)</i> | Treadwell |
| | A lecture and laboratory course for nonmedical students. Prerequisite: Chemistry 22 and 152. Material fee, \$12 a term. Tues and Thurs., 9:00 to 12:00 A.M. and 1:00 to 2:00 P.M. | |
| 224 | <i>Biochemistry of the Enzymes</i> | Horecker |
| | Lecture course dealing with the biochemistry of the enzymes and enzyme reactions. Prerequisite: Biochemistry 114 or 221. | |
| 225 | <i>Biochemical Preparations</i> | The Staff |
| | Material fee, \$10. Time and credits to be arranged. | |
| 226 | <i>Biochemical Laboratory Methods</i> | The Staff |
| | Material fee, \$12. Time and credits to be arranged. | |
| 227-28 | <i>Biochemistry Seminar (1-1)</i> | Roe |
| | The current literature in the field of biochemistry, mainly for graduate students, but open to a limited number of specially qualified medical students. Fri., 4:45 P.M. | |
| 231 | <i>Proteins and Amino Acids (1)</i> | Irving |
| | A lecture course. Prerequisite: Biochemistry 114 or 222. Mon., 4:45 P.M. | |
| 295-96 | <i>Research in Biochemistry</i> | Roe, Treadwell |
| | Time and credits to be arranged. | |
| 299-300 | <i>Thesis (3-3)</i> | Roe |
| 404 | <i>Applied Nutrition (1)</i> | Sebrell |
| | For senior medical students and graduate students. Lecture course upon dietary requirements, deficiency diseases, and therapeutic diets. Prerequisite: Biochemistry 114 or 222. Sat., 10:00 A.M. | |

DERMATOLOGY AND SYPHILOLOGY

Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology, Executive Officer*

George William Creswell, A.B., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*

Hayden Kirby-Smith, B.S., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*

Theodore Claremont Chen Fong, M.D., *Associate in Dermatology and Syphilology*

James Quincy Gant, Jr., M.S., M.D., *Associate in Dermatology and Syphilology*

Wendell Melvin Willett, M.D., *Associate in Dermatology and Syphilology*

Reuben Goodman, M.D., *Clinical Instructor in Dermatology and Syphilology*

313-14 *Dermatology and Syphilology* The Staff
Lectures on diseases of the skin and syphilis. One hour a week.

316 *Neurosyphilis* Fong
Lectures, clinical demonstrations, and practical diagnostic and therapeutic procedures. One hour a week for eight weeks.

317-18 *Clinic* The Staff
Case demonstrations, diagnosis, and treatment of skin diseases and syphilis. Three hours a week. Gallinger Hospital.

407-8 *Clinic* The Staff
Dermatology and syphilology in infants and children. Childrens Hospital. Two hours a week.

409-10 *Clinic* The Staff
Clinical demonstration, diseases of the skin. Two hours a week. Emergency Hospital.

411-12 *Clinic* The Staff
Clinical demonstrations, diseases of the skin, and diagnosis and therapy of syphilis. Two hours a week. University Hospital.

MEDICINE

- Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Professor of Medicine*
 Thomas McPherson Brown, A.B., M.D., *Professor of Medicine, Executive Officer*
 Charles Robert Lee Halley, A.B., M.D., *Clinical Professor of Medicine*
 Paul Frederick Dickens, M.D., *Clinical Professor of Medicine*
 Harry Filmore Dowling, A.B., M.D., *Clinical Professor of Medicine*
 Benjamin Frank Miller, B.S., Chem. Eng., M.D., *Clinical Professor of Medicine*
 Clayton Bernard Ethridge, M.D., *Clinical Professor of Medicine*
 Sol Katz, B.S., M.D., *Adjunct Clinical Professor of Medicine*
 Harry Eagle, A.B., M.D., *Adjunct Clinical Professor of Medicine*
 Louis Katz Alpert, B.S., M.D., *Adjunct Clinical Professor of Medicine*
 Joseph Francis Sadusk, Jr., A.B., M.D., *Adjunct Clinical Professor of Medicine*
 Joseph Francis Fazekas, B.S., M.D., *Adjunct Clinical Professor of Medicine*
 Clark Harvey Yeager, M.D., Dr.P.H., *Professorial Lecturer on Tropical Medicine*
 Norman Hawkins Topping, A.B., M.D., *Professorial Lecturer on Rickettsial Diseases*
 Monroe James Romansky, A.B., M.D., *Associate Professor of Medicine*
 Peter Diacoumis Comanduras, M.D., M.S., *Associate Clinical Professor of Medicine*
 Walter Kendall Myers, B.S., M.D., *Assistant Clinical Professor of Medicine*
 John Alton Reed, A.B., M.D., *Assistant Clinical Professor of Medicine*
 Theodore Judson Abernethy, B.S., M.D., *Assistant Clinical Professor of Medicine*
 William Travis Gibb, A.B., M.D., *Assistant Clinical Professor of Medicine*
 John McCallum Evans, A.B., M.D., *Assistant Clinical Professor of Medicine*
 Roy Hertz, Ph.D., M.D., *Assistant Clinical Professor of Medicine*
 Carl Leonard Larson, B.S., M.D., *Assistant Clinical Professor of Medicine*
 Carl Calvin Dauer, A.B., M.D., M.P.H., *Assistant Clinical Professor of Medicine*
 Samuel Ross Taggart, M.D., *Assistant Clinical Professor of Medicine*
 Alfred Henry Lawton, M.D., Ph.D., *Assistant Clinical Professor of Medicine*
 Benjamin Manchester, M.D., *Assistant Clinical Professor of Medicine*

Irving Wolfe Winik, M.D., *Assistant Clinical Professor of Medicine*
Clarence Richard Hartman, A.B., M.D., *Assistant Clinical Professor of Medicine*

John Minor, A.B., M.D., *Associate in Medicine*
Watson William Eldridge, Jr., M.D., *Associate in Medicine*
Maurice Protas, A.B., M.D., *Associate in Medicine*
Pearl Holly, M.S., M.D., *Associate in Medicine*
Lawrence Jay Thomas, B.S., M.D., *Associate in Medicine*
James Joseph Feffer, A.B., M.D., *Associate in Medicine*
Lawrence Elias Putnam, A.B., M.D., *Associate in Medicine*
John Watkins Trenis, A.B., M.D., *Associate in Medicine*
Bernard Lauriston Hardin, Jr., A.B., M.D., *Associate in Medicine*
Andrew Gabriel Prandoni, B.S., M.D., *Associate in Medicine*
Charles William Ordman, A.B., M.D., *Associate in Medicine*
Ruth Hechler Wichelhausen, M.D., *Associate in Medicine*
Albert David Kistin, A.M., M.D., *Associate in Medicine*
Benjamin Calloway Jones, Jr., M.D., *Associate in Medicine*
Richard Bernard Castell, A.B., M.D., *Associate in Medicine*
Myer Harold Stolar, B.S., M.D., *Associate in Medicine*
Mark Hummer Lepper, M.D., *Associate in Medicine*
Kenneth McLane Smith, A.B., M.D., *Associate in Medicine*
James Edward McCormack, A.B., M.D., *Associate in Medicine*
Sam Thompson Gibson, B.S., M.D., *Associate in Medicine*
Walter Lewis Nalls, B.S., M.D., *Associate in Medicine*
Luther Henry Snyder, A.B., M.D., *Clinical Instructor in Medicine*
Emil Herbert Bauersfeld, A.B., M.D., *Clinical Instructor in Medicine*
John Bayne Marbury, M.D., *Clinical Instructor in Medicine*
Louis Ross, M.D., *Clinical Instructor in Medicine*
James Theodore Burns, M.D., *Clinical Instructor in Medicine*
Frederic Dunbar Chapman, A.B., M.D., C.M., *Clinical Instructor in Medicine*
Irvin Kerlan, B.S., M.D., C.P.H., *Clinical Instructor in Medicine*
Virginia Patterson Beelar, A.B., M.D., *Clinical Instructor in Medicine*
Alfred Brigulio, M.D., *Clinical Instructor in Medicine*
Lester Sylvan Blumenthal, A.B., M.D., M.S. in Med., *Clinical Instructor in Medicine*
Samuel Jacob Nathan Sugar, Phar.G., M.D., *Clinical Instructor in Medicine*
Joseph Ney, B.S., M.D., *Clinical Instructor in Medicine*
Henry Dunlop Ecker, B.S., M.D., *Clinical Instructor in Medicine*
John Wilmer Latimer, Jr., M.D., *Clinical Instructor in Medicine*
Charles Wilson Jones, A.B., M.D., *Clinical Instructor in Medicine*
Halla Brown, M.D., *Clinical Instructor in Medicine*
Frank Solomon Bacon, B.S., M.D., *Clinical Instructor in Medicine*

Joseph Beinstein, A.B., M.D., *Clinical Instructor in Medicine*
William Frank, M.D., *Clinical Instructor in Medicine*
Stanley William Kirstein, M.D., *Clinical Instructor in Medicine*
James Walling Long, M.D., *Clinical Instructor in Medicine*
Ralph Bretney Miller, M.D., *Clinical Instructor in Medicine*
Raymond Schwartz, A.B., M.D., *Clinical Instructor in Medicine*
Robert George Taylor, M.D., *Clinical Instructor in Medicine*
Charles Waters Thompson, M.D., *Clinical Instructor in Medicine*
Thomas Stone Sappington, A.B., M.D., *Clinical Instructor in Medicine*
Maurice Franks, M.D., *Clinical Instructor in Medicine*
Charles Edward Law, M.D., *Clinical Instructor in Medicine*
Israel Kessler, M.S., M.D., *Clinical Instructor in Medicine*
Jack Jacob Rheingold, A.B., M.D., *Clinical Instructor in Medicine*
Francis James Murray, A.B., M.D., *Clinical Instructor in Medicine*
Robert Lee Brickhouse, B.S., M.D., *Clinical Instructor in Medicine*
Morris Hirsh Rosenberg, A.B., M.D., *Clinical Instructor in Medicine*
Hyman Joseph Zimmerman, A.B., M.D., *Clinical Instructor in Medicine*
Maurice Mensh, M.D., *Clinical Instructor in Medicine*
Robert Norwood Coale, B.S., M.D., *Clinical Instructor in Medicine*
Harry Clark Bates, B.S., M.D., *Clinical Instructor in Medicine*
James Francis Ambury, B.S., M.D., *Clinical Instructor in Medicine*
William Otis Bailey, Jr., M.D., *Clinical Instructor in Medicine*
Edwin Pearson Parker III, B.S., M.D., *Clinical Instructor in Medicine*
Thomas Joseph Pekin, M.D., *Clinical Instructor in Medicine*
Andrew Joseph Brennan, M.D., *Clinical Instructor in Medicine*
Eugene Solomon Gladsden, B.S., M.D., *Clinical Instructor in Medicine*
Jeanne Cecile Bateman, A.B., M.D., *Clinical Instructor in Medicine*
Richard Lee Whelton, M.D., *Clinical Instructor in Medicine*
John William Du Chez, M.D., *Clinical Instructor in Medicine*
Thomas Lees Hartman, A.M., M.D., *Clinical Instructor in Medicine*
William Merchant, A.B., M.D., *Clinical Instructor in Medicine*
Sidney Olansky, B.S., M.D., *Clinical Instructor in Medicine*
Boris Rabkin, A.B., M.D., *Clinical Instructor in Medicine*
Morton Harold Rose, M.D., *Clinical Instructor in Medicine*
George Sharpe, A.B., M.D., *Clinical Instructor in Medicine*
Irene Gorski Tamagna, M.D., *Clinical Instructor in Medicine*
Warren Daniel Brill, B.S., M.D., *Clinical Instructor in Medicine*
Frederick Warren Coe, B.S., M.D., *Clinical Instructor in Medicine*
Joseph Michael Pisani, A.B., M.D., *Clinical Instructor in Medicine*
Marvin Fuchs, B.S., M.D., *Clinical Instructor in Medicine*
Frank Goodnow MacMurray, A.B., M.D., *Clinical Instructor in Medicine*
William Jack Weaver, Jr., A.B., M.D., *Clinical Instructor in Medicine*
James Irving Boyd, M.D., *Lecturer in Medicine*

Jack Kleh, A.B., M.D., *Research Fellow in Cardiology*
 Abraham Wolffe Danish, A.B., M.D., *Fellow in Gastroenterology*
 James Packard Mann, M.D., *Teaching Fellow in Pulmonary Diseases*
 William Edward Nessel, A.B., M.D., *Fellow in Cardiology*
 Maurice Arthur Sislen, A.B., M.D., *Fellow in Pulmonary Diseases*
 John Grant Wilmer, A.B., M.D., *Research Fellow in Cardiology*
 Harold Wade Spies, B.S., M.D., *Fellow in Medicine*

- 132 *History of Medicine* The Staff
 One hour a week.
- 236 *Clinical Microscopy* The Staff
 Conferences and studies in the clinical application of laboratory examinations of blood, body fluids, exudates, and excreta. Three hours a week.
- 241 *Physical Diagnosis I* The Staff
 Theoretical considerations of the principles of physical diagnosis. One hour a week.
- 242 *Physical Diagnosis II* The Staff
 Covers not only theoretical but practical application of principles of physical diagnosis as related to examination of patients. Six hours a week.
- 244 *Introduction to Medicine* The Staff
 Lectures covering the principles of internal medicine preparatory to clinical studies and training in the inpatient and outpatient services. Four hours a week.
- 320 *Medical Jurisprudence* The Staff
 Lectures on the legal and ethical rights of physicians, and on the legal problems with which the physician comes in contact. One hour a week for sixteen weeks.
- 325-26 *Clinical Clerkships* The Staff
 Training with bed patients under individual instruction designed to develop ability in examination of patients and case taking as well as practice in clinical microscopy. Eight weeks.
- 327-28 *Clinical Pathological Conferences I* Brown, Choisser
 Required in the third year. Correlation of clinical and post-mortem findings: detailed case description from the clinical point of view followed by demonstrations of post-mortem findings. One hour a week.
- 339-40 *Therapeutic Conferences I* Staff of Medicine and Pharmacology
 Conferences designed to emphasize the application of pharmacological principles to the problems of clinical medicine. One hour a week.
- 349-50 *Medical Conferences* The Staff
 Two hours a week.

421-22 *Outpatient Clinics*

The Staff

Individual case studies under personal supervision of the Staff. Daily clinics on current medical problems and seminars stressing physiological aspects of diseases. Individual examinations and instruction in medical specialties. University and Emergency hospitals. Eight weeks.

423-24 *Clinical Clerkship*

The Staff

Available at the University, Emergency, Mt. Alto, and Walter Reed hospitals. Eight weeks.

427-28 *Clinical Pathological Conferences II*

Brown, Choisser

Required in the fourth year. Continuation of 327-28. One hour a week, in rotation.

439-40 *Therapeutic*

Staff of Medicine and Pharmacology

Conferences II

Continuation of 339-40. One hour a week.

MILITARY SCIENCE AND TACTICS *

Joseph Augustine Connor, Jr., M.D., Major, Medical Corps, United States Army, *Professor of Military Science and Tactics, Executive Officer*

129-30 *Elementary Course, Senior Division ROTC* Connor (First Year)

World situation, national defense, and ROTC (3); military obligations of citizenship (1); organization of the Army (10); organization of the Medical Department (5); courtesies and customs of the Service (2); military law (4); military training (2); medical military history (1); military administration (3); examination and discussion (1).

247-48 *Elementary Course, Senior Division ROTC* Connor (Second Year)

World situation, national defense, and ROTC (3); organization and employment of medical service of field army (5); duties of the surgeon (3); medical service, zone of communications (3); medical service, zone of interior (3); medical supply (3); introduction to map reading (4); health and national security (2); first aid, bandaging, and splinting (5); examination and discussion (1).

329-30 *Advanced Course, Senior Division ROTC ‡* Connor (First Year)

World situation, national defense, and ROTC (3); military preventive medicine (20); field medicine and surgery (6); army graduate professional education program (1); army career (1); examination and discussion (1).

429-30 *Advanced Course, Senior Division ROTC ‡* Connor (Second Year)

World situation, national defense, and ROTC (3); military preventive medicine (11); medical aspects of atomic warfare (2); medical aspects of chemical warfare (2); military psychiatry (5); personnel management (3); military medical research development (3); organized reserve corps (1); mobilization (1); examination and discussion (1).

* Figures in parenthesis indicate the number of hours devoted to the subject.

‡ Students in the advanced course are selected from those who satisfactorily complete the elementary course, or have one year active federal service.

NEUROLOGY AND NEUROLOGICAL SURGERY

Walter Freeman, Ph.D., M.D., *Professor of Neurology, Executive Officer*

James Winston Watts, B.S., M.D., *Professor of Neurological Surgery*

Hyman David Shapiro, M.D., *Associate Clinical Professor of Neurology*

Robert Henry Groh, B.S., M.D., *Assistant Clinical Professor of Neurology*

Paul Chodoff, A.B., M.D., *Associate in Neurology*

James Peter Murphy, B.S., M.D., *Associate in Neurological Surgery*

George Davis Weickhardt, M.D., *Clinical Instructor in Neurology*

Hugo Victor Rizzoli, A.B., M.D., *Clinical Instructor in Neurological Surgery*

Jonathan Marshall Williams, M.D., *Clinical Instructor in Neurological Surgery*

Oscar Legault, A.B., M.D., *Clinical Instructor in Neurology*

John William Kemble, A.B., M.D., *Clinical Instructor in Neurology*

Harold Bernard Lehrman, A.B., M.D., *Clinical Instructor in Neurology*

Marion Ballard Richmond, B.S., M.D., *Clinical Instructor in Neurology*

Laszlo Nandor Tauber, M.Ch., M.D., *Teaching Fellow in Neurological Surgery*

Luis Guildbaldo Murillo, B.S., M.D., *Fellow in Neurology*

DeLora Fowler Mott, M.D., *Fellow in Neurology and Neurological Surgery*

Jesus Sanchez-Perez, M.D., *Fellow in Neurology and Neurological Surgery*

249-50 *Neurology (elective)*

Freeman

Methods of study of the nervous system. Gross and microscopic preparations, embryology, comparative anatomy, stimulation and extirpation, human pathology, etc. Laboratory demonstrations. One hour a week.

331 *Neurology*

Shapiro and Staff

Systematic lectures with lantern slides, illustrating the chief neurologic syndromes and their anatomic bases. One hour a week.

333-34 *Neurology and Neurological Surgery, Clinical Clerkship*

Freeman and Staff

Instruction in history, physical examination, ordinary clinical procedures. Attendance at neurological operations. Gallinger Hospital. Four students in rotation, two weeks.

335-36 *Neurological Conference*

Freeman and Staff

Clinical conference one afternoon a week followed by clinicopathologic study of specimens from current necropsies. Gallinger Hospital. Two and one-half hours a week.

431-32 *Neurology Clinic*

Shapiro and Staff

Neurological outpatient clinic. Consultation of staff on ambulatory cases, demonstration of diagnostic procedures, disposition of neuropsychiatric cases. Discussion of neuropathologic material. University Hospital. Two hours a week.

433-34 *Neurosurgery*

Watts and Staff

Clinical demonstrations in surgery of the brain, spinal cord, and peripheral nerves. Emphasis is laid upon fundamentals and upon the possibilities of surgery in the relief of symptoms. University and Gallinger hospitals. Section of four students, two hours a week.

OBSTETRICS AND GYNECOLOGY

- John Parks, M.S., M.D., *Professor of Obstetrics and Gynecology, Executive Officer*
Radford Brown, M.D., *Clinical Professor of Obstetrics and Gynecology*
Jacob Kotz, M.D., *Clinical Professor of Obstetrics and Gynecology*
Henry Lauran Darner, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
Herbert Percy Ramsey, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
Robert Henry Barter, M.D., *Adjunct Clinical Professor of Obstetrics and Gynecology*
George Nordlinger, A.B., M.D., *Associate in Obstetrics and Gynecology*
Laurence Lee Cockerille, M.D., *Associate in Obstetrics and Gynecology*
Clayton Howard Hixson, M.D., *Associate in Obstetrics and Gynecology*
Henry John Russell McNitt, B.S. in Med., M.D., *Associate in Obstetrics and Gynecology*
Samuel Mayer Dodek, A.M., M.D., *Associate in Obstetrics and Gynecology*
Russel Jon Jansen, M.D., *Associate in Obstetrics and Gynecology*
Howard Pope Parker, A.B., M.D., *Associate in Obstetrics and Gynecology*
Roger O'Donnell, Jr., A.B., M.D., *Associate in Obstetrics and Gynecology*
James Albert Dushabek, M.D., *Associate in Obstetrics and Gynecology*
Barton Winters Richwine, M.D., *Associate in Obstetrics and Gynecology*
Clarence Kendall Fraser, Ph.B., M.D., *Associate in Obstetrics and Gynecology*
Charles Henry Nash, Jr., M.D., *Instructor in Obstetrics and Gynecology*
Katherine Elizabeth Parker, A.M., M.D., *Clinical Instructor in Obstetrics and Gynecology*
William Dandridge Terrell, Jr., M.D., *Clinical Instructor in Obstetrics and Gynecology*
Samuel Hazen Shea, M.D., *Clinical Instructor in Obstetrics and Gynecology*
Julius Robert Epstein, M.D., *Clinical Instructor in Obstetrics and Gynecology*
Morton Selwyn Kaufman, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
Floyd Sterling Rogers, M.D., *Clinical Instructor in Obstetrics and Gynecology*

- Neel Jack Price, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Rufus Martin Roll, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Caroline Jackson, A.M., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Jeremiah Keith Cromer, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Jed Williams Pearson, Jr., A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Thomas Miles Leonard, Ph.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 William Thurston Lady, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Albert Seymour Bright, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Shirley Sue Martin, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Roland Essig Bieren, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Alexander Le Sueur Russell, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Donald Walters, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Thomas Ashton Wilson, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Ekrem Suleyman Turan, M.D., *Research Associate in Obstetrics and Gynecology*

54 *Normal Obstetrics*

Fraser, Dodek

Lectures and demonstrations on the physiology and management of normal pregnancy. One hour a week.

337-38 *Abnormal Obstetrics*

Nordlinger, Parks

Lectures and demonstrations on the complications of pregnancy. One hour a week.

343 *Gynecology*

Brown

Lectures and demonstrations on the principles of gynecology. One hour a week.

344 *Marriage and Marital Problems*

Ramsey, Nordlinger

A course of instruction in marriage counseling and planned parenthood. One hour a week.

348 *Female Endocrinology and Operative Gynecology*

Kotz, Darner

Lectures on the physiology and pathology of the female endocrine system and on principles of gynecological surgery. One hour a week.

401-2 *Manikin Demonstrations*

Lady

The mechanism of labor and various types of operative delivery demonstrated to sections of the class in weekly sessions.

441-42 *Clinical Obstetrics*

Parks and Staff

Senior students participate in prenatal and postnatal clinic care; make postpartum home calls; observe the course of labor and deliver patients under supervision; attend biweekly departmental conferences and daily ward rounds in the University and Gallinger hospitals.

443-44 *Clinical Gynecology*

Parks and Staff

Senior students observe and participate in the gynecological work of clinics, operating rooms, and gynecological services of the University and Gallinger hospitals.

OPHTHALMOLOGY

Ernest Alfred Watson Sheppard, M.D., C.M., *Professor of Ophthalmology, Executive Officer*

Ronald Atmore Cox, A.B., M.D., *Assistant Clinical Professor of Ophthalmology*

Frank Duncan Costenbader, B.S., M.D., *Assistant Clinical Professor of Ophthalmology*

Richard Wallace Wilkinson, M.S., M.D., *Associate in Ophthalmology*

Sterling Bockoven, M.D., *Associate in Ophthalmology*

Walter Joseph Romejko, M.D., *Clinical Instructor in Ophthalmology*

Carmon Robert Naples, B.S., M.D., *Clinical Instructor in Ophthalmology*

Micollus Noel Stow, M.D., D.M.S., *Clinical Instructor in Ophthalmology*

James Spencer Dryden, M.D., *Clinical Instructor in Ophthalmology*

William Paxson Chalfant, Jr., M.D., *Clinical Instructor in Ophthalmology*

William Joseph Graham Davis, A.B., M.D., *Clinical Instructor in Ophthalmology*

William Henry Hanna, A.B., M.D., *Clinical Instructor in Ophthalmology*

351-52 *Ophthalmology*

The Staff

A lecture course presenting the principles of ophthalmology, with special reference to topics of importance to the general practitioner. One hour a week for sixteen weeks.

447 *Clinic*

The Staff

During medical outpatient service, each student is given individual instruction in the ophthalmological aspects of systemic disease.

OTO-RHINO-LARYNGOLOGY

Daniel Bruce Moffett, A.B., M.D., *Professor of Oto-rhino-laryngology,
Executive Officer*

William Herndon Jenkins, M.D., *Clinical Professor of Oto-rhino-laryn-
gology*

Leroy Lee Sawyer, A.B., M.D., *Assistant Clinical Professor of Oto-
rhino-laryngology*

David Davis, A.B., M.D., *Associate in Oto-rhino-laryngology*

Aubrey David Fischer, M.D., *Associate in Oto-rhino-laryngology*

Joel Norton Novick, M.S., M.D., *Clinical Instructor in Oto-rhino-
laryngology*

Catharine Birch, A.B., M.D., *Clinical Instructor in Oto-rhino-laryn-
gology*

Homer King Vann, A.B., M.D., *Clinical Instructor in Oto-rhino-laryn-
gology*

James Jerry McFarland, Jr., B.S., M.D., *Clinical Instructor in Oto-
rhino-laryngology*

Thomas Frasier Williams, M.D., *Clinical Instructor in Oto-rhino-laryn-
gology*

451 *Oto-rhino-laryngology* Moffett, Jenkins
Lectures and demonstrations on anatomy, physiology, and diseases of
the ear, nose, and throat. One hour a week.

454 *Bronchoscopy* Davis
A series of lectures on the fundamental principles and the use of in-
struments, including both the bronchoscope and esophagoscope. One
hour a week for two weeks.

456 *Clinic* The Staff
Practical clinical instruction in the diagnosis and treatment of diseases
of the ear, nose, and throat. University Hospital. One and one-half
hours twice a week.

PATHOLOGY

Roger Morrison Choisser, B.S., M.D., *Professor of Pathology, Executive Officer*

Thomas Martin Peery, A.B., M.D., *Associate Professor of Pathology*

Carl Hunt Wells, B.S., M.D., *Associate Professor of Pathology*

Robert Pelley Hill, B.S., M.D., *Assistant Professor of Pathology*

Clem Casper Crossland, Jr., M.D., *Teaching Fellow in Pathology*

James Allen Sargent, M.D., *Teaching Fellow in Pathology*

James Adam Sowers, A.B., M.D., *Teaching Fellow in Pathology*

Leila Hulbert Wells, A.B., M.D., *Teaching Fellow in Pathology*

SEMINAR LECTURERS

Elson Bowman Helwig, B.S., M.D., *Professorial Lecturer in Pathology*

Hans Frank Smetana, M.D., *Professorial Lecturer in Pathology*

Henry Rappaport, M.D., *Professorial Lecturer in Pathology*

James Earle Ash, Jr., M.D., *Professorial Lecturer in Pathology*

Elizabeth Maplesden Ramsey, A.B., M.D., *Professorial Lecturer in Pathology*

259-60 *Pathology*

Choisser and Staff

Malformations, inflammations, degenerations, and neoplasms; special pathology of the organs and specific diseases. The laboratory work consists of the gross and microscopic study of diseased tissues. Necropsies are held regularly at the University and Gallinger hospitals.

307 *Necropsy (elective)*

The Staff

Students assist in the performance of necropsies. Fresh gross specimens and microscopic sections from each case are presented at weekly conferences. Current literature relating to cases is reviewed and presented by the students.

327-28 *Clinical Pathological Conference*

Choisser, Brown

Required in the third and fourth years. Case histories are presented and discussed by members of the staff and student body; necropsy and clinical findings are compared, and gross and microscopic specimens examined. One hour a week.

460 *Research*

Choisser

Hours and credits to be arranged.

PEDIATRICS

Preston Alexander McLendon, B.S., M.D., *Professor of Pediatrics, Executive Officer*

Margaret Mary Nicholson, A.B., M.D., *Clinical Professor of Pediatrics*

Edward Lewis, M.D., *Clinical Professor of Pediatrics*

William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*

Lewis Kaigler Sweet, A.B., M.D., *Adjunct Clinical Professor of Pediatrics*

Mabel Harlakenden Grosvenor, A.B., M.D., *Assistant Clinical Professor of Pediatrics*

John Augustine Washington, A.B., B.S., M.D., *Assistant Clinical Professor of Pediatrics*

Aaron Nimetz, A.B., M.D., *Assistant Clinical Professor of Pediatrics*

Dorothy Steinle Jaeger-Lee, M.D., *Assistant Clinical Professor of Pediatrics*

George Maksim, M.D., M.S. in Ped., *Assistant Clinical Professor of Pediatrics*

Reginald Spencer Lourie, M.D., *Associate in Pediatrics*

Henry Marcus Work, A.B., M.D., *Associate in Pediatrics*

Frederic Gerard Burke, B.S., M.D., *Associate in Pediatrics*

William Allen Howard, A.B., M.D., *Associate in Pediatrics*

John Howell Peacock, B.S., M.D., *Clinical Instructor in Pediatrics*

Herbert Harold Diamond, M.D., *Clinical Instructor in Pediatrics*

Reginald Henry Mitchell, M.D., *Clinical Instructor in Pediatrics*

Maynard Irving Cohen, A.B., M.D., *Clinical Instructor in Pediatrics*

Mary Katherine Laurence Sartwell, A.B., M.D., *Clinical Instructor in Pediatrics*

Sydney Ross, M.D., *Clinical Instructor in Pediatrics*

Charles Frederick Stiegler, A.B., M.D., *Clinical Instructor in Pediatrics*

Hugh Gambel Clark, A.B., M.D., *Clinical Instructor in Pediatrics*

Herbert Dudley Glick, B.M., M.D., *Clinical Instructor in Pediatrics*

Mary Jane Howell, A.B., M.D., *Clinical Instructor in Pediatrics*

Adrian Recinos, Jr., B.S., M.D., *Clinical Instructor in Pediatrics*

Samuel Bessman, M.D., *Fellow in Pediatrics*

Joseph Michael Lo Presti, B.S., M.D., *Teaching Fellow in Pediatrics*

256 *Pediatrics*

McLendon and Staff

Lectures on physiology of the newborn, development, infant nutrition, diseases of the newborn, common anomalies and system illnesses of childhood. Medical School. Two hours a week.

357-58 *Clinical Clerkship—General Pediatrics*

Nicholson and Staff

General pediatric diseases and the newborn. Emphasis on history

taking and physical examination. Daily ward rounds. Gallinger Municipal Hospital. Five students in rotation, two weeks.

359-60 *Clinical Clerkship—Contagious Diseases* Grosvenor and Staff

Preventive and quarantine measures. Daily ward rounds and conferences. Gallinger Municipal Hospital. Five students in rotation, two weeks.

361-62 *Clinical Conference* McLendon and Staff
Required in third year. Presentation and discussion of current patient problems. Gallinger Municipal Hospital. One hour a week.

365 *Clinical Conference I* McLendon and Staff
Required in the third year. Staff and student discussion of diagnosis and management. Medical School. One hour a week.

457-58 *Clinical Clerkship* McLendon and Staff
Full time including assignment to night and holiday admissions. Case studies on wards under direct Resident supervision. Ward rounds with Staff and Residents. Childrens Hospital. Twelve students, six weeks.

459-60 *Outpatient Clinics* Washington and Staff
Work in Medical and Specialty clinics including surgery, allergy, X-ray, child welfare, cardiology, dermatology, neurology, and child guidance. Childrens Hospital.

461-62 *Clinico-pathological Conference* McLendon and Staff
Clinical and pathological discussion of recent patient history and laboratory data. Childrens Hospital.

463-64 *Group Conferences* McLendon and Staff
Discussion of clinical problems of diagnosis and treatment of current patients. Childrens Hospital. Twice a week.

465 *Clinical Conference II* McLendon and Staff
Required in the fourth year. Case presentation by fourth-year students. Staff and student discussion of diagnosis and management. Medical School. One hour a week.

PHARMACOLOGY

Paul Kenneth Smith, Ph.D., *Professor of Pharmacology, Executive Officer*

Erwin Ellis Nelson, M.D., Ph.D., *Adjunct Clinical Professor of Pharmacology*

Hugh Hackland Darby, Ph.D., *Research Professor of Biophysics*

Aldo Peter Truant, Ph.D., *Assistant Professor of Pharmacology*

Murray Finkelstein, M.S., *Assistant Professor of Pharmacology*

Harold George Mandel, Ph.D., *Research Associate in Pharmacology*

261 *Pharmacology* The Staff
Lectures and conferences concerning the interaction of drugs and biological systems as a basis for the rational therapy of disease. Five hours a week.

263 *Pharmacology Laboratory* The Staff
Laboratory instruction and demonstrations designed to complement the above course. Five hours a week.

265 *Chemotherapy* The Staff
Five lectures a week for three weeks. Designed for graduate students.

361-62 *Pharmacological Research* The Staff
Primarily for those properly qualified graduate and medical students seeking careers in pharmacology. Hours and credits to be arranged.

363-64 *Pharmacology Seminar (1-1)* The Staff
Recent advances in pharmacology. For those interested in pharmacological research. Two hours a week.

369-70 *Clinical Pharmacology* The Staff
Discussions of the pharmacological basis of therapeutics. One hour a week.

479-80 *Special Methods in Research* The Staff
A course to familiarize the student with advanced chemical and physiological methods employed in pharmacological investigations. Hours and credits to be arranged.

PHYSICAL MEDICINE

Charles Samuel Wise, B.S., M.D., *Associate Professor of Physical Medicine, Executive Officer*

Dorothy Emily Voss, Ed.B., R.P.T.T., *Associate in Physical Medicine*

Alvin Knudson, B.S., M.D., *Associate in Physical Medicine*

Jasper Wayne McFarland, B.S., M.D., *Clinical Instructor in Physical Medicine*

150 *Elements of Physical Medicine*

The Staff

In arrangement with the Anatomy Department, lectures and demonstrations of the various tests and measurements are employed in the evaluation of physical disability. Emphasis is placed on normal and abnormal peripheral nerve testing (electrodiagnosis), muscle testing, joint range, and other physical disability measurements.

351-52 *Advanced Physical Medicine*

The Staff

Lectures and demonstrations concerning the various techniques, clinical applications of physical medicine, and rehabilitation to be integrated with the teaching of the associated medical and surgical specialties.

467-68 *Clinical Studies*

The Staff

Clinical teaching and demonstration at the University Hospital.

485 *Research*

The Staff

Hours to be arranged.

PHYSIOLOGY

Errett Cyril Albritton, A.B., M.D., *Fry Professor of Physiology, Executive Officer*

Chester Elwood Leese, Ph.D., *Professor of Physiology*

Alvin Edward Parrish, M.D., *Professorial Lecturer in Physiology*

Hyman Erwin Steinman, M.D., *Professorial Lecturer in Physiology*

_____, *Assistant Professor of Physiology*

James Thomas Hicks, M.S., *Associate in Physiology*

Joseph William Still, M.D., M.P.H., *Instructor in Physiology*

115 *Physiology* (3) Leese and Staff
Lectures for academic students covering the fundamentals of physiology in its various subdivisions. Prerequisites: one year of general science or one term of a biological science. Section A: Tues., Thurs., and Sat., 9:10 A.M.; section B: Tues. and Thurs., 5:10 to 6:25 P.M.

117 *Experimental Physiology* (1) Hicks and Staff
Laboratory exercises in the fundamentals of physiology, for academic students. Prerequisite or concurrent registration: Physiology 115 or the equivalent. Material fee, \$12. Sat., 10:10 A.M. to 1:00 P.M.

120 *Physiology of Endocrine Activity* (2) Albritton
The circulatory, metabolic, reproductive, growth, and other adaptations, immediate and long term, accompanying and affecting endocrine activity. May be taken for two credits with additional work. Prerequisite: Physiology 115 or the equivalent. Tues. and Thurs., 5:10 P.M.

130 *The Psycho-physiology of Personality* (2) Leese
Lectures on the genesis and expression of personality, with emphasis on the physiological approach. Prerequisite: Physiology 115 or the equivalent and general psychology. Tues. and Thurs., 6:10 P.M.

150 *Advanced Physiology* The Staff
One hundred physiological lectures and one hundred thirty laboratory hours devoted to the major divisions of the subject. For Medical Students.

159-60 *Experimental Method* (1-1) Albritton
Design of controlled experiments in medical or biological investigation; errors in design; criticism and judgment of evidence, and tests of the statistical significance of experimental results. Sat., 12:00 to 1:00 P.M.

169-70 *Problems in Physiology* Albritton and Staff
Hours and credits to be arranged.

179-80 *Physiology Seminar* (1-1) The Staff
Weekly throughout the year.

- 231 *Advanced Physiology of Circulation and Respiration* (2) Albritton and Staff
Lectures on blood, heart, circulation, respiration, and acid-base balance. Two hours a week, to be arranged.
- 234 *Advanced Physiology of Nutrition, Metabolism, and Excretion* (2) Steinman and Staff
Lectures on nutrition, digestion, metabolism, excretion, temperature regulation, and water balance. Two hours a week, to be arranged.
- 236 *Advanced Physiology of the Endocrine Glands and Reproduction* (1) Albritton and Staff
Lectures on ductless glands, hormones, humoral agents, and reproduction. One hour a week, to be arranged.
- 238 *Advanced Physiology of the Neuro-Muscular System* (2) Leese and Staff
Lectures on sensory reception, central nervous processes, somatic and visceral motor activity, and the behavior of smooth and striped muscle. Two hours a week, to be arranged.
- 240 *Advanced Experimental Physiology* (3) The Staff
Laboratory work only. Correlated with the lectures in courses 231-238. Material fee, \$25. Nine hours a week, to be arranged.
- 295-96 *Research* Albritton, Leese, and Staff
Hours and credits to be arranged.
- 299-300 *Thesis* (3-3) Albritton, Leese

PSYCHIATRY

Winfred Overholser, A.B., M.D., Sc.D., *Professor of Psychiatry, Executive Officer*

Roscoe Willis Hall, Ph.B., M.D., *Clinical Professor of Psychiatry*

Solomon Katzenelbogen, M.D., *Clinical Professor of Psychiatry*

Addison McGuire Duval, M.D., *Clinical Professor of Psychiatry*

Sidney Berman, B.S., M.D., *Assistant Clinical Professor of Psychiatry*

Morris Kleinerman, Ch.D., M.B., *Assistant Clinical Professor of Psychiatry*

Henry Prather Laughlin, B.S., M.D., *Assistant Clinical Professor of Psychiatry*

Marshall deGraffenried Ruffin, B.S., M.D., *Assistant Clinical Professor of Psychiatry*

Leon Yochelson, A.B., M.D., *Assistant Clinical Professor of Psychiatry*

Harriet Elizabeth Twombly, A.B., M.D., *Associate in Psychiatry*

Samuel Alexander Silk, Ph.D., M.D., *Associate in Psychiatry*

Isabelle Kendig, Ph.D., *Associate in Psychiatry*

Norman Taub, B.S., M.D., *Associate in Psychiatry*

William Green Cushard, M.D., *Clinical Instructor in Psychiatry*

Helen Pallister, Ph.D., *Clinical Psychiatrist*

165 *Dynamics of Personality Development* Berman

An orientation course in the anatomical, physiological, and psychological growth and development of personality. Consideration of characteristics of structure, function, and development of the psyche leading to normal behavior as a basis for the study of the pathological. Evaluation of interpersonal relationships. One hour a week.

178 *Psychopathology* Hall

Manifestations and understanding of various mental mechanisms and abnormal reaction-types, preceded by history of development of psychopathology and illustrated with case material. One hour a week.

266 *Psychiatry* Overholser

History, etiology, symptoms, course, and treatment of the major psychoses with emphasis on the dynamics involving the person as a whole. One hour a week.

268 *Demonstration Clinics* Silk, Twombly

Presentation of clinical cases of major mental illnesses and primary behavior disturbances, correlating with Psychiatry 266. Each student examines patients under supervision. Three hours a week. St. Elizabeths Hospital.

271 *Psychosomatic Aspects of General Medicine* Katzenelbogen

Somatic disorders of psychogenic origin. The role of personality reactions in functional and organic disorders. One hour a week.

- 324 *Psychoneurosis* Laughlin
Etiology, psychopathology, clinical aspects, and treatment of various types of psychoneuroses. One hour a week for twelve weeks. Medical Conference Room, Gallinger Hospital.
- 326 *Psychological Techniques in Psychiatric Practice* Kendig
Discussion of psychological concepts and tools available for determination of intellectual level, personality structure, functional impairment, and organic deterioration. One hour a week for four weeks. Medical Conference Room, Gallinger Hospital.
- 331-32 *Clinical Clerkship* Cushard, Taub
Under supervision, each student conducts mental and physical examinations of patients, works up and presents his cases for discussion and conclusion. Two-week assignments by section. Gallinger Hospital.
- 431-32 *Clinical Clerkship* Duval, Kleinerman, Laughlin, Ruffin, Yochelson, Pallister
Supervised examination, diagnosis, and treatment of ambulatory borderline cases. Conferences for discussion of cases. Clinical application of psychiatric principles to general medical practice is stressed. Three hours twice a week, in rotation. University Hospital Out-patient Psychiatric Clinic.

RADIOLOGY

William Stanbro, M.D., *Associate Professor of Radiology, Executive Officer*

Solomon Rodney Bersack, M.D., *Associate in Radiology*

Keene Manning Wallace, M.D., *Associate in Radiology*

213 *Basic Radiology* The Staff
Orientation lectures in X-ray physics.

341-42 *Radiological Diagnosis* The Staff
Lectures in conjunction with the course in Physical Diagnosis.

358 *Advanced Radiological Diagnosis* The Staff
Lectures and discussions.

449 *Clinical Studies* The Staff
Students assigned in rotation on a full-time basis for a specific period to the X-ray Department.

478 *Research* The Staff
Hours to be arranged.

SURGERY

- Brian Blades, A.B., M.D., *Professor of Surgery, Executive Officer*
 Daniel LeRay Borden, A.M., M.D., *Clinical Professor of Surgery*
 Paul Stirling Putzki, M.D., *Clinical Professor of Surgery*
 Arch Lockhart Riddick, B.S., M.D., *Clinical Professor of Surgery*
 William Berry Marbury, M.D., *Clinical Professor of Surgery*
 Custis Lee Hall, M.D., *Clinical Professor of Surgery*
 John Hugh Lyons, M.S., M.D., *Clinical Professor of Surgery*
 Paul Budd Magnuson, M.D., *Adjunct Clinical Professor of Surgery*
 John Gordon Lee, A.B., M.D., C.M., Med. Sc.D., *Adjunct Clinical Professor of Surgery*
 Sam Foster Seeley, B.S., M.B., M.D., *Adjunct Clinical Professor of Surgery*
 Wallace Harry Graham, B.S., M.D., *Professorial Lecturer in Surgery*
 Herbert Hermann Schoenfeld, M.D., *Associate Clinical Professor of Surgery*
 William Warren Sager, M.S., M.D., *Associate Clinical Professor of Surgery*
 Alec Horwitz, M.S., M.D., *Associate Clinical Professor of Surgery*
 Benjamin Franklin Dean, Jr., M.S., M.D., *Assistant Clinical Professor of Surgery*
 William Stanley McCune, A.B., M.D., *Assistant Clinical Professor of Surgery*
 Vincent Michael Iovine, B.S., M.D., *Assistant Clinical Professor of Surgery*
 Carl Berg, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Calvin Trexler Klopp, A.B., M.D., *Assistant Clinical Professor of Surgery*
 Julius Salem Neviasser, A.B., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Jerome Blaine Harrell, M.D., *Assistant Clinical Professor of Surgery*
 Leonard Theodore Peterson, A.B., B.S., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Richard Knight Thompson, D.D.S., *Associate in Dental Surgery*
 William Ross Morris, M.D., *Associate in Surgery*
 Harold Walter Krogh, D.D.S., *Associate in Dental Surgery*
 Jacob Joseph Weinstein, B.S., Phar.G., M.D., *Associate in Surgery*
 William Carey Meloy, M.D., M.S. in Med., *Associate in Surgery*
 Edward Alexander Cafritz, M.D., *Associate in Surgery*
 Edward James Beattie, Jr., M.D., *Associate in Surgery*
 Walter Henry Gerwig, Jr., A.B., M.D., *Associate in Surgery*
 Hazen Eugene Cole, B.S., M.D., *Clinical Instructor in Surgery*

Crenshaw Douglas Briggs, B.S., M.D., *Clinical Instructor in Surgery*
 William Wiley Chase, A.B., M.D., *Clinical Instructor in Surgery*
 Arthur James Mourot, B.S., M.D., *Clinical Instructor in Surgery*
 Joseph Francis Conlon, D.D.S., *Clinical Instructor in Dental Surgery*
 Otto Anderson Engh, A.B., M.D., *Clinical Instructor in Surgery*
 Duane Case Richtmeyer, A.B., M.D., *Clinical Instructor in Surgery*
 Richard Lee Jackson, M.D., *Clinical Instructor in Surgery*
 Leon Gerber, M.D., *Clinical Instructor in Surgery*
 Thomas Bradley, A.B., M.D., *Clinical Instructor in Surgery*
 Lloyd Byron Burk, Jr., M.D., *Clinical Instructor in Surgery*
 Ernest Alva Gould, M.D., *Clinical Instructor in Surgery*
 Austin Bertram Rohrbaugh, Jr., M.D., *Clinical Instructor in Orthopedic Surgery*
 T. Wiley Hodges, A.B., M.D., *Clinical Instructor in Surgery*
 George Alfred Higgins, B.S., M.D., *Clinical Instructor in Surgery*
 Marvin Hayne Kendrick, A.B., M.D., *Clinical Instructor in Surgery*
 Brooks Gideon Brown, B.S., M.D., *Clinical Instructor in Surgery*
 William Bert Ford, B.S., M.D., *Clinical Instructor in Surgery*
 Gordon Sparks Letterman, A.B., B.S., M.D., *Clinical Instructor in Surgery*
 Lois Irene Platt, A.B., M.D., *Clinical Instructor in Surgery (Cancer Cytology)*
 Theodore Crandall Alford, A.B., M.D., *Fellow in Surgery*
 Guy Neill Berry, B.S., M.D., *Fellow in Surgery*
 William Shibley Elias, A.B., M.D., *Fellow in Surgery*

280 *Introduction to Surgery* The Staff
 One hour twice a week. Lectures and recitations covering the field of general surgery.

284 *Surgical Physiology* The Staff
 A clinical and laboratory course with particular emphasis on applied physiology. Two hours a week.

373-74 *Clinical Clerkship I* The Staff
 The student is assigned and required to work up thoroughly the cases for diagnosis and treatment. Gallinger Hospital.

375-76 *Ward Walks* The Staff
 Group ward rounds are made with the visiting physicians and their respective staffs in the course of their usual rounds. Gallinger Hospital.

377-78 *Orthopedics I* The Staff
 Weekly orthopedic lecture, Gallinger Hospital; weekly three-hour orthopedic clinic, Surgery Outpatient Department, University Hospital.

379-80 *Surgical Staff Conference I* The Staff
 Tuesday at Gallinger Hospital; Wednesday at the University Hospital.

- 383-84 *Surgical Clinic I* Blades
Demonstration of various surgical diseases to the entire third- and fourth-year classes. One hour a week.
- 385 *Surgical Anatomy* Horwitz
Two one-hour lectures a week. University Hospital.
- 391-92 *Surgical Pathology I* Hill
One hour conference each week.
- 473-74 *Clinical Clerkships II* The Staff
Available at the University, Walter Reed, Emergency, and Mt. Alto hospitals.
- 477-78 *Orthopedics II* The Staff
Weekly orthopedic lecture, Gallinger Hospital; weekly three-hour orthopedic clinic, Surgery Outpatient Department, University Hospital.
- 479-80 *Surgical Staff Conference II* The Staff
Tuesday at Gallinger Hospital; Wednesday at the University Hospital.
- 483-84 *Surgical Clinic II* Blades
Demonstration of various surgical diseases to the entire third- and fourth-year classes. One hour a week.
- 491-92 *Surgical Pathology II* Hill
One hour conference each week.
- 493-94 *Surgical Diseases of the Chest* Blades and Staff
(Elective)
Patients with various diseases of the chest, including the lungs, mediastinum and esophagus are presented. The cases are followed from week to week and operative specimens and microscopic sections are demonstrated. Walter Reed Hospital. Two hours a week.

UROLOGY

Frederick A. Reuter, M.D., *Professor of Urology, Executive Officer*
Thomas Carlton Thompson, B.S., M.D., *Clinical Professor of Urology*
Gilbert Ottenberg, A.M., M.D., *Associate in Urology*
William Dabney Jarman, B.S., M.D., *Clinical Instructor in Urology*
Edward Egnor Ferguson, M.D., *Clinical Instructor in Urology*
Leon Richard Culbertson, B.S., M.D., *Clinical Instructor in Urology*
Gordon Rhodes MacDonald, M.D., *Clinical Instructor in Urology*
Herbert DeGrange Wolff, Jr., M.D., *Clinical Instructor in Urology*

395-96 *Clinics* The Staff
Clinical teaching and demonstrations on the care of urological cases with special emphasis on the pre- and post operative management. Operative clinics and clinical teaching. Gallinger Hospital.

491-92 *Urology* Reuter and Staff
Lectures covering the entire field of urology including diagnosis, treatment, and morbid pathology. One hour a week.

495-96 *Clinics* Reuter and Staff
Clinical demonstrations and teaching in the Outpatient Department, with special attention given to diagnostic procedures. Emergency and University hospitals. One part of each section daily.

DEGREES CONFERRED

DOCTOR OF MEDICINE

JUNE 1, 1949

Atchison, Joseph Lave	Va.	Kiracofe, Arthur Hiram, Jr.	Md.
Baird, Glenn Dean	D.C.	A.B. 1943, Franklin and Marshall College	
B.S. 1944, University of Oregon			
Band, Philip Theodore	D.C.	A.M. 1945, Columbia University	Mich.
A.B. 1945, The George Washington University		Lahti, Carl Robert	Fla.
Berkow, Morton Donald	D.C.	Lane, John Goethe, Jr.	Ill.
B.S. 1946, Franklin and Marshall College		Lash, Robert Frederick	Va.
Bessman, Alice Neuman	N.J.	Law, Arthur Gregory	Oreg.
(With distinction)		Lee, Gilbert Stanley	
A.B. 1941, Smith College		A.B. 1941, Stanford University	
Binder, Samuel Sholom	Pa.	Macleon, Marion Elizabeth	D.C.
A.B. 1945, Marietta College		B.S. 1944, The George Washington University	
Boteler, Marcia	D.C.	Mahaney, Thomas Preston	Mich.
A.B. 1945, The George Washington University		Michael, Arnold Hugh	D.C.
Boyd, Thompson Harmes	Ill.	(With distinction)	
B.S. 1946, University of Oklahoma		Michols, Raymond Martin	Wis.
Burnes, James Patrick, Jr.	D.C.	B.S. 1945, University of Notre Dame	Va.
Chapman, James Eliot	D.C.	Miller, Ray Lambert	
Cluff, Leighton Eggertsen	Utah	B.S. 1936, Northwest Missouri State Teachers College	Calif.
(With distinction)		Mossman, Paul Burrell	
Cohen, June Rae	D.C.	A.B. 1945, University of California	
(With distinction)		O'Leary-Matthews, Mary Jean	Md.
B.S. 1945, The George Washington University		(With distinction)	
Cooper, William Hurlbert	Ohio	A.B. 1946, The George Washington University	
A.B. 1946, Western Reserve University		Pitner, Robert James	Miss.
Cooperman, Bernard Robert	D.C.	B.S. 1949, Mississippi State College	
A.B. 1946, The George Washington University		Pollack, Jerome Lee	D.C.
Crisp, William Earl, Jr.	Ohio	B.S. 1945, Franklin and Marshall College	
Curtis, James Leroy	Wis.	Porter, Melvin A.	Kans.
De Lashmott, Robert Eugene	Ohio	Presto, Ernest Carl	N.Y.
Ditzler, Marshall Ernest	Pa.	(With distinction)	
B.S. 1935, Lebanon Valley College		Robertson, John A.	Calif.
Dixon, William Martin	Ind.	Shaheen, Michael Edmund	Miss.
Droulard, Kenneth Earl	Mich.	B.S. 1918, Boston University	
Dunbar, Anne Cameron	Conn.	Siggers, Richard Lawrence	D.C.
A.B. 1942, The George Washington University		A.B. 1945, Columbia University	
A.M. 1944, Colorado College		Smith, James Anthony	N.Y.
English, Harold Meduin	Md.	Solomon, Robert Joseph	Mich.
B.S. 1949, Washington College		Stout, Henry Wallace	D.C.
Essman, Leonard Joseph	N.Y.	Teller, Harold Stanley	Md.
Foster, Robert Russell	Ohio	Tomlinson, William Barrington	N.J.
Goddard, James Lee	Ohio	(With distinction)	
Greenlee, Robert Leonard	Ind.	Tway, Lawrence Edward	Calif.
Hardy, William McClure	Wash.	Van Atta, Glen Benjamin, Sr.	Ohio
B.S. 1945, University of Oregon		Van Gelderen, Beetha Elizabeth	D.C.
Hashim, John Sarkise	Mass.	A.B. 1947, The George Washington University	
B.S. 1947, University of New Hampshire		Wensel, Louise Otford	Md.
Haynes, Aubrey Franklin	Tenn.	A.B. 1949, Wellesley College	Conn.
Hines, Robert Haynam	Ohio	Whitnack, John Doyle	D.C.
B.S. 1949, Mount Union College		Whyte, Ann	
Howie, Donald Lynk	Mass.	A.B. 1946, The George Washington University	
Jenkins, Robert Lawrence, Jr.	Pa.	Williams, Gerald Albert	Iowa
Kelser, George Archibald, Jr.	Md.	(With distinction)	
B.S. 1946, Harvard University		B.S. 1945, South Dakota State College	
Kilpatrick, John Taylor	Okl.	Wimberley, Mary Claire Baker	Ala.
B.S. 1945, University of Oklahoma		A.B. 1944, University of Alabama	
		Yerman, Thomas William	R.I.
		Zitani, Alfred Marcus, Jr.	N.I.

STUDENTS REGISTERED IN THE SCHOOL OF MEDICINE

1949-50

A			
Abraham, Abe Samuel (IV)	Calif.	Breeding, Robert Burton (III)	Ky.
B.S. 1918, Westminster College		A.B. 1944, Transylvania College	
Araujo-Vidal, Juan (III)	Puerto Rico	B.S. 1944, University of Kentucky	Va.
B.S. 1940, University of Puerto Rico		Brennan, Robert James (II)	
Ashworth, Charles Raymond (I)	Idaho	A.B. 1949, The George Washington	
Avery, John Lawrence (IV)	D.C.	University	
B.S. 1937, University of Maryland		Brewer, Robert George (II)	Md.
M.S. 1939, The George Washington		A.B. 1948, Hamilton College	Calif.
University)		Bristow, John Wesley (IV)	Fla.
Aye, Ralph Claxton (IV)	Ill.	Broadstreet, Henry Thomas, Jr. (IV)	
M.S. 1941, Northwestern University		B.S. 1945, University of Florida	N.Y.
		Brooks, Harrison Morton, Jr. (IV)	
		B.S. 1940, Wheaton College, Ill.	
		Bruce, Clayton Roy (IV)	Md.
		B.S. 1946, University of Pittsburgh	D.C.
		Bruce, James Crawford (III)	N.Y.
		Busch, Ines Lorraine (I)	
		B.S. 1949, University of Rochester	
B		C	
Bacci, Carl Eugene (I)	Fla.	Cahan, Jules Isaac (I)	D.C.
Baratta, Michael Vincent (I)	N.Y.	B.S. 1949, The George Washington	
A.B. 1949, Columbia University		University	
Barfoot, Julius Jackson (IV)	N.C.	Carnes, Raymond Eugene (IV)	Md.
Barfoot, Verna Young (IV)	N.C.	A.B. 1947, The George Washington	
B.S. 1938, University of Cincinnati		University	
M.S. 1945, University of Chicago		Carr, George Lafayette (II)	Ga.
Barila, Timothy George (IV)	N.Mex.	Clinkston, Philip (II)	Mich.
Barinott, Jeanne Frances (III)	D.C.	B.S. 1943, University of Michigan	
B.S. 1947, Pennsylvania State College		M.S. 1948, The George Washington	
Barkin, Gilbert Donald (I)	D.C.	University	
B.S. 1949, The George Washington		Cobb, Leonard Cowgill (I)	Wash.
University		B.S. 1949, University of Washington	
Barnett, Helen McConnell (IV)	D.C.	Colley, Hubert Franklin (I)	Tenn.
A.B. 1947, The George Washington		Cohen, George Joel (IV)	D.C.
University		Cohen, Melvin S. (I)	N.Y.
Barnett, Robert Alexander (II)	D.C.	A.B. 1918, Brooklyn College	
A.B. 1949, The George Washington		B.S. 1949, The George Washington	
University		University	
Barr, Joseph Frederick (III)	N.J.	Cole, Fenwick Earl (II)	D.C.
Barriou, William John (III)	Pa.	Cole, Ralph John (III)	Pa.
B.S. 1946, Pennsylvania State Teachers		A.B. 1948, The George Washington	
College, East Stroudsburg		University	
Beatty, Harry Bartton (III)	Va.	Conner, Ray Bradford (I)	D.C.
A.B. 1948, The George Washington		Connor, Audrey Marie (IV)	D.C.
University		A.B. 1941, Trinity College	
Bellomy, Bruce Ben (II)	Va.	Connor, Joseph Daniel (IV)	D.C.
Bergstrom, Roger Heaner (II)	Md.	Conzelman, Gaylord Maurice III	Calif.
Bernstein, Miriam Hannah (I)	N.Y.	B.S. 1949, Idaho State College	
A.B. 1949, Mount Holyoke College		Cooper, Charles David (III)	D.C.
Berry, Robert Hahn (III)	Ohio	A.B. 1948, The George Washington	
Blachly, Charles Howard (I)	Fla.	University	
B.S. 1940, American University		Corrado, Michael Anthony (II)	D.C.
Blair, Thomas Calvin (III)	D.C.	A.B. 1949, The George Washington	
B.S. 1947, University of Michigan		University	
Blue, John Frederick (III)	D.C.	Corwin, Leonard Joel (II)	N.J.
B.S. 1948, North Carolina State		B.S. 1947, Rutgers University	
College		Costas, Raul, Jr. (I)	Puerto Rico
Bowen, Thales, Jr. (II)	D.C.	B.S. 1949, Villanova College	
A.B. 1949, The George Washington		Coultrip, Raymond Laverne, Jr. (II)	D.C.
University		Crowell, Jack (III)	D.C.
Bowler, John Andrew, Jr. (III)	D.C.	B.S. 1947, The George Washington	
A.B. 1949, The George Washington		University	
University			
Boyer, Delos White (IV)	D.C.		
Bradley, John Grover (III)	Nev.		
Brady, Neal Caldwell (III)	Calif.		
B.S. 1947, Western Reserve University			
Brauner, Edgar Newlon, Jr. (III)	D.C.		

D			
Dalton, Charles Edward (IV)	Va.	Fisher, James William (II)	S.C.
Davis, David Stanley (I)	Ohio	B.S. 1947, University of South Carolina	
Davis, Thomas McLellan, Jr. (II)	D.C.	Fisher, Allen Edmund (I)	Pa.
A.B. 1948, The George Washington University		B.S. 1949, Pennsylvania State College	
Deliman, Robert Michael (I)	Pa.	Foot, Milton A. (II)	D.C.
B.S. 1949, University of Pittsburgh		A.B. 1947, University of Southern California	
DeWitt, James Corwin (III)	Va.	Foulke, Charles William (I)	Ohio
B.S. 1947, Mount Union College		A.B. 1949, Ohio State University	
DiBenedetto, Anthony Domenico (IV)	N.Y.	Fowler, Edward Vincent (I)	Md.
B.S. 1941, Villanova College		B.S. 1949, University of Maryland	
Dobson, Richard Hal (I)	Va.	Funt, Tobias (IV)	Mo.
B.S. 1949, Kansas State College		A.B. 1948, University of Missouri	
Domann, William Arthur (I)	Wis.	Furlow, William Thomas (I)	Minn.
B.S. 1948, University of Wisconsin		A.B. 1949, Carleton College	
Doran, Stephen Mark (IV)	Mich.	G	
Donaty, James Douglas (I)	N.J.	Gall, John Christian, Jr. (I)	Va.
B.S. 1949, Villanova College		Gargano, Frederic Patrick (II)	N.J.
Dotson, Maryanna Elizabeth (III)	D.C.	B.S. 1947, The George Washington University	
A.B. 1948, The George Washington University		Garnett, James Harper Poor (IV)	D.C.
Dovle, John Benedict, Jr. (II)	Calif.	A.B. 1947, University of Virginia	
A.B. 1948, University of California at Los Angeles		Gates, John William (III)	Calif.
DuBroff, Seymour (III)	D.C.	George, Harry Clair (IV)	Ohio
A.B. 1948, The George Washington University		B.S. 1944, Mount Union College	
Duffy, Charles Creighton (I)	Md.	Gerbie, Albert Bernard (III)	Ohio
B.S. 1949, University of Nevada		Gibson, James Wallace (IV)	Va.
E		B.S. 1941, Hampden Sydney College	
Eanet, Morton Philip (III)	D.C.	Gillard, William Henry (I)	D.C.
A.B. 1947, Yale University		Gillette, Warren (IV)	D.C.
Eckleton, Harold Norris, Jr. (II)	Md.	B.S. 1942, California Institute of Technology	
Ehrmantraut, Wilfred Russell (II)	Md.	Gillman, Robert David (IV)	D.C.
B.S. 1948, University of Maryland		A.B. 1939, Yale University	
Eilenberg, David (II)	N.J.	A.M. 1946, Columbia University	
A.B. 1949, The George Washington University		Gimble, Abraham Isaac (II)	D.C.
Ennis, Harry Hughes (II)	Utah	B.S. 1941, M.S. 1948, The George Washington University	
A.B. 1948, Brigham Young University		Glew, William Bainbridge (I)	D.C.
Epstein, Jerome Harold (I)	D.C.	Godbey, Gloria Swanson (II)	D.C.
A.B. 1947, New York University		A.B. 1949, The George Washington University	
A.M. 1948, The George Washington University		Goodman, Clifford James (III)	Ariz.
Erickson, Robert Lyle (IV)	D.C.	B.S. 1947, The George Washington University	
Everding, Charles Jerome (IV)	Md.	Gordon, Howard Leo (I)	D.C.
Everhart, Clarence Edward, Jr. (II)	Ohio	B.S. 1948, Georgetown University	
B.S. 1948, Western Reserve University		Gordon, James Kerke (II)	Va.
F		A.B. 1949, The George Washington University	
Fabi, Mario Nestor (IV)	Pa.	Gould, Stanley Benton (I)	Md.
Farr, Boyd Joseph (II)	Utah	B.S. 1949, Haverford College	
Fealy, Jack (III)	Ala.	Greaver, Keith Carpenter (III)	Idaho
B.S. 1947, Birmingham-Southern College		B.S. 1941, University of Idaho	
Federle, Jesse Alan (II)	Nebr.	Green, Jess Downing, Jr. (IV)	Va.
A.B. 1949, The George Washington University		A.B. 1944, University of Kansas City	
Fezell, Richard Albert (III)	Ohio	Green, William Oliver, Jr. (II)	D.C.
B.S. 1948, Western Reserve University		A.B. 1949, The George Washington University	
Feltman, Robert Ferree (II)	Va.	Grunsten, Russell Carl (I)	Fla.
A.B. 1949, The George Washington University		Guerin, Bernard K. (IV)	Md.
Ferguson, William Holmes (I)	D.C.	B.S. 1944, Louisiana State University	
B.S. 1949, University of Tulsa		M.S. 1946, The George Washington University	
Fernbach, Donald Joseph (II)	N.Y.	Guthrie, Eugene Harding (III)	Md.
A.B. 1948, Tusculum College		H	
Files, George Everett (IV)	Md.	Hagen, William August, Jr. (II)	Ohio
B.S. 1943, Tufts College		A.B. 1948, Hiram College	

Hall, Allan (II)	N.J.	Kirchner, Francis Carlyle (II)	Md.
A.B. 1949, Columbia College		B.S. 1948, The George Washington University	
Hamby, Alice Walters (IV)	D.C.	Kleh, Thomas Robert (I)	Md.
A.B. 1943, Transylvania College		Klein, David Mendel (I)	D.C.
Hansen, Martin Edward (III)	Calif.	Klika, Raymond Riggs (III)	Ohio
Harrigan, John Thomas (I)	N.J.	Knapp, Robert Duane, Jr. (II)	D.C.
Harris, Forest Claire (I)	D.C.	A.B. 1948, The George Washington University	
B.S. 1949, The George Washington University		Knox, Robert Ormiston, Jr. (IV)	D.C.
Haslop, Allen Lee (IV)	Fla.	A.B. 1947, The George Washington University	
Healy, Paul Thomas (I)	D.C.	Kolb, Basil Philip (IV)	D.C.
Henesy, Gregory Thomas (II)	D.C.	Kusmar, Robert Lawrence (III)	Va.
A.B. 1949, The George Washington University		A.B. 1943, Boston University	
Habee, Charles Eldon (II)	N. Mex.	I.	
Hollingsworth, James Boetler (I)	Md.	Larson, Robert LeRoy (I)	Mont.
Holmworth, Dorothy Catherine (III)	Md.	A.B. 1942, Montana State University	
A.B. 1944, Notre Dame College, Ind.		Lasher, Jay Donald (III)	Pa.
A.M. 1946, Catholic University of America		B.S. 1942, University of Pittsburgh	
Hong, Doris M. (II)	N.Y.	Laughman, Roy William, Jr. (III)	Tenn.
A.B. 1944, Hunter College		A.B. 1942, Marville College	
Hopkins, Theodore Reed (III)	Calif.	Leabhart, John William, Jr. (I)	Pa.
A.B. 1947, Stanford University		Leary, Patrick James (I)	D.C.
Horn, Henry Joseph (IV)	Pa.	Leake, Jack (IV)	Va.
B.S. 1947, Lehigh University		B.S. 1948, Marshall College	
Howard, Percy John (I)	Ala.	Leonardo, David Rino (III)	D.C.
B.S. 1949, University of Alabama		A.B. 1948, The George Washington University	
Howard, Robert Lynwood (III)	Ala.	Littwin, Charles Stuart (IV)	N.J.
A.B. 1948, University of Alabama		A.B. 1943, Hobart College	
Hutches, Francis Homer, Jr. (IV)	D.C.	Longfellow, Day Woodward (I)	D.C.
B.S. 1946, Salem College		Lyons, William Stewart (III)	D.C.
Hunt, William George (I)	Iowa	A.B. 1948, The George Washington University	
A.B. 1949, State University of Iowa		III.	
Hunter, Richard Edwin (II)	D.C.	Maffey, Ralph Burton (IV)	N.J.
A.B. 1949, The George Washington University		B.S. 1943, Rutgers University	
Hutt, James Brooke, Jr. (III)	Va.	Mayleby, Dale Hammer (I)	Idaho
B.S. in E.E. 1942, University of Michigan		B.S. 1948, A.B. 1940, College of Idaho	
Hyde, Grant Lafayette (III)	Calif.	Mayness, John Lower (IV)	Ohio
I.		Matvey, John Gage (I)	Mich.
Ice, John Frederick (I)	Pa.	B.S. 1949, Michigan State College	
J.		Manahan, Raymond James (I)	Ohio
Jensen, Jack Monsen (I)	Md.	Martens, James Charles (IV)	D.C.
Johnson, Howard Hamilton, Jr. (III)	D.C.	A.B. 1947, The George Washington University	
A.B. 1948, The George Washington University		Manthey, Richard Gledhill (II)	Ohio
K.		B.S. 1948, Western Reserve University	
Kassenbrock, John Donald (I)	Calif.	Markwood, Carl Christopher (I)	Pa.
A.B. 1949, University of California		B.S. 1946, St. Vincent College	
Kayhoe, Donald Ellsworth (IV)	Md.	Martens, Doris Katharine (III)	Calif.
A.B. 1946, The George Washington University		A.B. 1944, University of Southern California	
Kearney, Robert Thomas (I)	Colo.	Martin, Dean Harrington (IV)	Md.
Kent, Stephen Garland (IV)	Va.	Mattingly, Thomas Ernest, Jr. (III)	Md.
Kerr, Horace Eskew (II)	D.C.	A.B. 1948, The George Washington University	
A.B. 1949, The George Washington University		Maupin, Dorothy Ray (I)	D.C.
Keshishian, John Mark (IV)	D.C.	B.S. 1949, The George Washington University	
Kingsley, Paul L. (I)	Md.	Mayberry, Paul Raymond (II)	Maine
B.S. 1947, Northwestern University		Maone, John C. (II)	Mich.
A.M. 1946, University of California at Los Angeles		A.B. 1948, Albion College	
Kinsman, Robert Gordon (I)	Md.	McClelland, James Robert (III)	D.C.
Kirby, Taylor Herman (I)	Ala.	McLown, Joseph Aaron (I)	Utah
A.B. 1949, Birmingham-Southern College		B.S. 1948, Utah State Agricultural College	

Sanders, Bertram Webb (I) A.B. 1949, Earlham College	Va.	Thorpe, Emmet Joseph (III) B.S. 1948, Western Reserve University	D.C.
Sandiford, George William (III)	D.C.	Titus, Elijah White, Jr. (II)	D.C.
Sandmeyer, Melvin Wesley, Jr. (I)	D.C.	Townsend, Charles Eby (III)	D.C.
Sansum, LaVane Earl (II) A.B. 1947, University of California	Calif.	A.B. 1948, The George Washington University	
Savarese, Charles Joseph, Jr. (IV)	D.C.	Tribble, William MacLohon (IV)	D.C.
A.B. 1941, University of North Carolina		A.B. 1943, Princeton University	
Saville, John William (I)	Md.	Tripp, Richard Carlton (II)	Va.
Schmidt, Donald Gerry (IV)	Mont.	A.B. 1947, State University of Iowa	
B.S. 1943, University of Washington		Tsomidis, James Leonidas (I)	Maine
Schmidt, William F. (III)	N.Y.	Tugendhaft, Robert Irwin (II)	D.C.
A.B. 1949, The George Washington University		B.S. 1948, The George Washington University	
Schultz, Theodore Arthur (II) B.S. 1948, Capital University	D.C.	U	
Schurter, Maxine Ann (III)	D.C.	Uhrik, Irene Joan (III)	Pa.
A.B. 1944, Pomona College		B.S. 1943, M.S. 1946, Pennsylvania State College	
Schwartz, Julius Louis (III)	N.Y.	Umhau, John B. (II)	D.C.
A.B. 1947, New York University		A.B. 1940, The George Washington University	
Schorer, Miriam Zeitlin (IV)	D.C.	Unger, Howard Robert (II)	D.C.
A.B. 1939, Hunter College		A.B. 1949, The George Washington University	
A.M. 1940, Columbia University		Upton, Emily Frances (IV)	Md.
Silverberg, Stanley Melvin (II)	D.C.	B.S. 1943, University of Maryland	
B.S. 1948, The George Washington University		V	
Smith, Casper Hayden, Jr. (I)	Okla.	Van de Water, Malcolm Stickle (III)	Fla.
Smith, Samuel Rodmond (III)	Va.	Vann, Clarence Houston (I)	Mich.
Solomon, Carl Edward (I)	Ohio	B.S. 1947, Wayne University	
Speevack, Harold Lynn (I)	Ohio	Varvaresca, Yvonne (I)	D.C.
B.S. 1949, Ohio State University		Vigoreaux, Jose Ramon (III)	Puerto Rico
Spruwell, Robert Roy (II)	Wyo.	Vivion, Charles George (II)	Wyo.
A.B. 1948, University of Denver		W	
Stachowiak, Edward Joseph (I)	Pa.	Waalkes, Teunis Phillip (III)	D.C.
Stage, Anson Hutchinson (II)	Va.	B.S. 1943, Hope College	
Stahl, Robert William (II)	Va.	Ph.D. 1945, Ohio State University	
A.B. 1948, Gettysburg College		Wacker, Warren Ernest Clyde (III)	Va.
Stallings, James Henry, Jr. (II)	D.C.	Wade, Robert Lee (III)	Calif.
A.B. 1948, Duke University		Waldrop, Francis Neil (IV)	Md.
Stamey, Harry Clay (II)	Pa.	A.B. 1946, University of Minnesota	
A.B. 1949, The George Washington University		Walter, Katherine Mariam (IV)	Md.
Stansfield, James Arthur (I)	Wash.	B.S. 1944, The George Washington University	
B.S. 1949, Washington State College		Weaver, Frank Lloyd, Jr. (IV)	Mich.
Stein, Harold Lawson (IV)	N.Y.	A.B. 1947, The George Washington University	
A.B. 1947, The George Washington University		Wellso, Charles George (I)	Wis.
Stewart, Allan Hugh (II)	Calif.	B.S. 1949, University of Wisconsin	
Stewart, Henry (II)	Nev.	West, Marc Lee (II)	D.C.
A.B. 1948, University of Nevada		B.S. 1948, The George Washington University	
Stewart, Jones Hartsell (I)	D.C.	Wherry, David Colwell (II)	Nebr.
B.S. 1949, Alabama Polytechnic Institute		A.B. 1948, The George Washington University	
Stokes, James Arthur (II)	Fla.	Whisenand, Benjamin Murray (III)	Oreg.
Straight, Belinda Crompton (III)	N.Y.	Whitehead, Roger Donald (II)	Calif.
Strauser, Noel Faine (I)	Ky.	Willett, Edwin Dexter (IV)	Md.
Stronski, Gerald Edward (I)	Mich.	Williams, Polly Teed (I)	D.C.
Stump, Charles Albert (II)	W.Va.	B.S. 1948, The George Washington University	
A.B. 1948, University of Pennsylvania		Wilson, William Dean (III)	Wyo.
Switzer, Walter Edwin (IV)	Ill.	B.S. 1949, University of Wyoming	
M.S. 1941, University of Illinois		Wineland, Robert Kenneth (III)	D.C.
T		A.B. 1948, The George Washington University	
Teagle, Ernest Howard (I)	D.C.		
Thibadeau, Andrew Francis (IV)	Md.		
A.B. 1948, The George Washington University			
Thomas, Paul Augustus, Jr. (II)	Pa.		
B.S. 1949, The George Washington University			

Winter, Frank Ephraim (IV)	N.Y.	Y	
B.S. 1943, University of Pittsburgh			
Woidich, Francis DeSales (II)	D.C.	Yanowitz, Arthur (IV)	N.Y.
B.S. 1945, Harvard University		Yediniak, Michael Aloysius (III)	Conn.
Wood, Edwin Charles (IV)	D.C.	Young, Robert (III)	D.C.
Wroth, Ralph Lane (III)	Pa.	A.B. 1948, The George Washington University	
A.B. 1947, Kenyon College			

SUMMARIES OF REGISTRATION

1949-50

NUMBER OF REGISTRANTS

Class entering September 1949.....	94
Class entering September 1948.....	84
Class entering September 1947.....	75
Class entering September 1946.....	78
Total.....	331

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Alabama	4	New Jersey	14
Arizona	2	New Mexico	2
California	17	New York	15
Colorado	1	North Carolina	2
Connecticut	1	Ohio	15
District of Columbia	113	Oklahoma	1
Florida	8	Oregon	1
Georgia	1	Pennsylvania	18
Idaho	3	Rhode Island	1
Illinois	2	Tennessee	2
Indiana	1	Texas	1
Iowa	1	Utah	3
Kentucky	2	Virginia	29
Maine	2	Washington	3
Maryland	34	West Virginia	2
Massachusetts	1	Wisconsin	3
Michigan	7	Wyoming	3
Minnesota	4	Hawaii	1
Missouri	1	Puerto Rico	3
Montana	2	Mexico	1
Nebraska	2	Total.....	331
Nevada	2		

GRADUATES OF COLLEGES REGISTERED IN THE SCHOOL OF MEDICINE

Alabama, University of	2	Catholic University of America ..	1
Alabama Polytechnic Institute ..	1	Chicago, University of	1
Albion College	1	Cincinnati, University of	1
American University	1	Columbia College	2
Amherst College	1	Columbia University	3
Birmingham-Southern University..	2	Denver University	1
Boston University	1	Drew University	1
Brooklyn College	1	Duke University	3
California, University of	2	Earlham College	1
California, University of, Los Angeles	1	Florida, University of	1
California Institute of Technology	2	Geneva College	1
Capital University	1	George Washington University..	78
Carleton College	1	Georgetown University	3
		Gettysburg College	1

Hamilton College	1	Pittsburgh, University of	5
Hampton-Sydney College	1	Pomona College	1
Harvard University	1	Princeton University	3
Haverford College	1	Puerto Rico, University of	1
Hawaii, University of	1	Rochester, University of	1
Hiram College	1	Rutgers University	3
Hobart College	1	St. Vincent College	1
Hope College	1	Salem College	1
Hunter College	2	Scranton, University of	1
Idaho, University of	2	Seton Hall College	1
Illinois, University of	1	South Carolina, University of ..	1
Iowa, State University of	2	Southern California, University of	2
Kansas City, University of	1	Stanford University	2
Kansas State College	1	Texas, Agricultural and Mechan-	
Kentucky, University of	1	ical College of	2
Kenyon College	1	Transylvania University	2
Lehigh University	1	Trinity College	1
Louisiana State University	1	Tufts College	1
Marshall College	1	Tusculum College	1
Maryland, University of	5	Utah State Agricultural College ..	1
Maryville College	1	Villanova College	4
Michigan, University of	3	Virginia, University of	2
Michigan State College	1	Washington, University of	3
Minnesota, University of	2	Washington and Lee University ..	1
Missouri, University of	1	Washington State College	2
Montana State University	1	Wayne University	1
Mount Holyoke College	1	Western Reserve University	5
Mount Union College	2	Westminster College	1
Nevada, University of	2	Wheaton College, Ill.	1
New York University	2	Wisconsin, University of	4
North Carolina, University of ..	1	Wyoming, University of	1
Northwestern University	2	Yale University	2
Notre Dame of Maryland, Col- lege of	1		
Ohio State University	3	Number of College Graduates	227
Pennsylvania, University of	1	Number of Colleges Repre- sented	64
Pennsylvania State College	3		

INDEX

INDEX

A

Administration, Officers of, 2
 Administrative assistants, 26
 Admission, 32-34:
 Application for, 34
 Premedical-college requirements for, 33
 Secondary-school requirements for, 33
 Advanced standing, 33
 Anatomy, courses in, 43
 Anesthesiology, courses in, 44
 Arts and Medicine, combined curriculum, 39
 Assistants in Instruction, 24-25
 Attendance, 35
 Awards, 37

B

Bachelor of Arts, degree of, 39
 Bacteriology, courses in, 45-46
 Biochemistry, courses in, 47

C

Calendar of the School, 1950-51, vi
 Clinics, 31-32
 Colleges from which students hold degrees, 83-84
 Committees of the Faculty, 28-29
 Courses of instruction, 42-75:
 Numbers and symbols used in connection with, 42

D

Degrees conferred in 1940, 76
 Departments of instruction, 29-30, 42-75
 Dermatology, courses in, 48
 Doctor of Medicine, degree of, 39

E

Emeritus professors, 4
 Equipment and facilities, 30-31
 Examinations, 36

F

Faculty, 27
 Fees, 34-35:
 Payment of, 34-35
 Financial regulations, 34-35

G

Geographical distribution of students, 83
 Grades, 36
 Gynecology, courses in, 57-59

H

Health Administration, 36-37
 History of the School, 29
 Honor Societies, 37
 Honors, 39
 Hospital appointments, 32
 Hygiene, courses in, 46

I

Intern training, 40

L

Library, 31
 Living accommodations, 38-39
 Loan funds, 35

M

Medical School Building, 24
 Medical Technologist Course, 40-41
 Medical Unit, Reserve Officers' Training Corps, U. S. Army, 37-38
 Medicine, courses in, 40-51
 Military Science and Tactics, courses in, 54

N

Neurology, courses in, 55-56
 Neurological Surgery, courses in, 55-56

O

Obstetrics, courses in, 57-59
 Ophthalmology, courses in, 60
 Orthoptic Technician Course, 40
 Oto-rhino-laryngology, courses in, 61

P

Pathology, courses in, 62
 Pediatrics, courses in, 63-64
 Pharmacology, courses in, 65
 Physical examinations, 32
 Physical Medicine, courses in, 66
 Physiology, courses in, 67-68
 Plan of instruction, 29-30
 Postgraduate instruction, 40
 Preventive Medicine, courses in, 46
 Prizes, 37
 Psychiatry, courses in, 69-70

R

Radiology, courses in, 71
 Registration, 34:
 Summaries of, 83-84
 Regulations, 35-36
 Research, assistants in, 24-25
 Resident training, 40

S

Scholarships, 37
Staff of Instruction, 3-24
Standing of the School, 29
Student equipment, cost of, 35
Students registered, 77-82
Surgery, courses in, 72-74
Syphilology, courses in, 48

T

Technical assistants, 26
Textbooks, cost of, 25
Trustees, Board of, 1

U

Urology, courses in, 75

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OF THE
MUSEUM OF NATURAL HISTORY

IN THE
BRITISH MUSEUM

OF NATURAL HISTORY

AND
THE
GALLERY OF
MINERALOGY

CONTENTS

	Page
THE UNIVERSITY CALENDAR.....	vii
OFFICERS AND COMMITTEES OF THE UNIVERSITY.....	xiii
The Board of Trustees.....	xv
Standing Committees of the Board of Trustees.....	xvii
Officers of Administration.....	xix
The Academic Council.....	xxi
Standing Committees of the Faculty.....	xxiii
Emeritus Faculty.....	xxv
Faculty and Staff of Instruction.....	xxvii
Administrative Assistants.....	lxiv
THE UNIVERSITY.....	1
History and Organization.....	3
Educational Facilities.....	7
Admission.....	11
Registration.....	20
Fees and Financial Regulations.....	21
Fellowships, Scholarships, Prizes, Financial Aid.....	24
Regulations.....	36
Veterans Education.....	43
THE COLLEGES, SCHOOLS, AND DIVISIONS.....	45
The Junior College.....	47
Columbian College (the senior college).....	63
The Graduate Council.....	80
The School of Medicine.....	88
The Law School.....	99
The School of Engineering.....	108
The School of Pharmacy.....	119
The School of Education.....	127
The School of Government.....	139
The Division of University Students.....	152
The Division of Special Students.....	153
The Summer Sessions.....	155
COURSES OF INSTRUCTION.....	157
Accounting.....	161
Anatomy.....	164
Anesthesiology.....	165
Art.....	166
Bacteriology, Hygiene, and Preventive Medicine.....	168
Biochemistry.....	170
Biology.....	172
Botany.....	173

	Page
Business Administration.....	176
Chemistry	180
Civil Engineering.....	185
Classical Languages and Literatures.....	188
Dermatology and Syphilology.....	189
Economics	190
Education	196
Electrical Engineering.....	202
English	205
Geography	210
Geology	213
Germanic Languages and Literatures.....	214
Health Administration.....	216
History	217
Home Economics.....	222
Journalism	225
Law	227
Mathematics	234
Mechanical Engineering.....	237
Medicine	240
Military Science and Tactics.....	245
Neurology and Neurological Surgery.....	246
Obstetrics and Gynecology.....	247
Ophthalmology	250
Oto-rhino-laryngology	251
Pathology	252
Pediatrics	253
Pharmacology	255
Pharmacy	256
Philosophy	261
Physical Education for Men.....	263
Physical Education for Women.....	268
Physical Medicine.....	273
Physics	274
Physiology	278
Political Science.....	280
Psychiatry	285
Psychology	287
Radiology	293
Religion	294
Romance Languages and Literatures.....	296
Secretarial Studies.....	302
Sociology	304
Speech	307
Statistics	311
Surgery	316
Urology	319
Zoology	320
STUDENT LIFE.....	325
INDEX	333

THE UNIVERSITY CALENDAR

1950							1951													
July							January							July						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	..	1	..	1	2	3	4	5	6	1	2	3	4	5	6	7
2	3	4	5	6	7	8	7	8	9	10	11	12	13	8	9	10	11	12	13	14
9	10	11	12	13	14	15	14	15	16	17	18	19	20	15	16	17	18	19	20	21
16	17	18	19	20	21	22	21	22	23	24	25	26	27	22	23	24	25	26	27	28
23	24	25	26	27	28	29	28	29	30	31	..	..	..	29	30	31	..	..	..	..
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
August							February							August						
..	..	1	2	3	4	5	..	..	..	..	1	2	3	..	..	..	1	2	3	4
6	7	8	9	10	11	12	4	5	6	7	8	9	10	5	6	7	8	9	10	11
13	14	15	16	17	18	19	11	12	13	14	15	16	17	12	13	14	15	16	17	18
20	21	22	23	24	25	26	18	19	20	21	22	23	24	19	20	21	22	23	24	25
27	28	29	30	31	..	..	25	26	27	28	..	..	..	26	27	28	29	30	31	..
September							March							September						
..	..	..	..	..	1	2	..	..	..	..	1	2	3	..	..	..	..	..	..	1
3	4	5	6	7	8	9	4	5	6	7	8	9	10	2	3	4	5	6	7	8
10	11	12	13	14	15	16	11	12	13	14	15	16	17	9	10	11	12	13	14	15
17	18	19	20	21	22	23	18	19	20	21	22	23	24	16	17	18	19	20	21	22
24	25	26	27	28	29	30	25	26	27	28	29	30	31	23	24	25	26	27	28	29
..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	..	..	..	..	..	..
October							April							October						
1	2	3	4	5	6	7	1	2	3	4	5	6	7	..	1	2	3	4	5	6
8	9	10	11	12	13	14	8	9	10	11	12	13	14	7	8	9	10	11	12	13
15	16	17	18	19	20	21	15	16	17	18	19	20	21	14	15	16	17	18	19	20
22	23	24	25	26	27	28	22	23	24	25	26	27	28	21	22	23	24	25	26	27
29	30	31	..	..	..	..	29	30	..	..	..	..	..	28	29	30	31	..	..	..
November							May							November						
..	..	..	1	2	3	4	..	..	1	2	3	4	5	..	..	..	1	2	3	4
5	6	7	8	9	10	11	6	7	8	9	10	11	12	4	5	6	7	8	9	10
12	13	14	15	16	17	18	13	14	15	16	17	18	19	11	12	13	14	15	16	17
19	20	21	22	23	24	25	20	21	22	23	24	25	26	18	19	20	21	22	23	24
26	27	28	29	30	..	..	27	28	29	30	31	..	..	25	26	27	28	29	30	..
December							June							December						
..	..	..	..	..	1	2	..	..	..	..	..	1	2	..	..	..	..	..	1	2
3	4	5	6	7	8	9	3	4	5	6	7	8	9	2	3	4	5	6	7	8
10	11	12	13	14	15	16	10	11	12	13	14	15	16	9	10	11	12	13	14	15
17	18	19	20	21	22	23	17	18	19	20	21	22	23	16	17	18	19	20	21	22
24	25	26	27	28	29	30	24	25	26	27	28	29	30	23	24	25	26	27	28	29
31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..

THE UNIVERSITY CALENDAR *

1950-51

Date	Day	Occasion
1950 FALL TERM:		
Sept. 26	Tuesday	Meeting of the University Faculty Examinations for students who wish to qualify for advanced courses or waive curriculum re- quirements
Sept. 27-29 ...	Wednesday through Friday	Registration
Oct. 2	Monday	Academic year begins
Oct. 12	Thursday	Stated meeting of the Board of Trustees
Oct. 13	Friday	Last day on which candidates may file thesis subjects for the Master's degrees conferred in February
Oct. 20	Friday	Last day on which candidates may file dissertation subjects for the degrees of Doctor of Philosophy, Doctor of Juridical Science, and Doctor of Edu- cation to be conferred the fol- lowing May
Nov. 11	Saturday	Fall Convocation. Holiday
Nov. 23-25 ...	Thursday through Saturday	Thanksgiving Recess
Dec. 5	Tuesday	Meeting of the Academic Council
Dec. 9	Saturday	Foreign-language examinations for candidates for the Master's de- grees
Dec. 14	Thursday	Stated meeting of the Board of Trustees
Dec. 22-Jan. 2.	Friday through Tuesday	Christmas recess
1951 Jan. 3	Wednesday	Classes resume
Jan. 5	Friday	Last day for applications for de- grees to be conferred in Feb- ruary
		Last day for receiving disserta- tions of candidates for the de- grees of Doctor of Philosophy, Doctor of Juridical Science, and Doctor of Education to be con- ferred in February

* In the School of Medicine, registration is conducted September 14 and 15, classes begin September 18.

THE UNIVERSITY CALENDAR—Continued

Date	Day	Occasion
Jan. 8	Monday	Last day for receiving theses of candidates for the Master's degrees and for the professional degrees in Engineering to be conferred in February
Jan. 20	Saturday	Last day of classes for the fall term
Jan. 22-30	Monday through Tuesday	Fall term examination period
WINTER TERM: Jan. 31	Wednesday	Examinations for students who wish to qualify for advanced courses or waive curriculum requirements
Feb. 1 and 2...	Thursday and Friday...	Registration
Feb. 5	Monday	Classes resume for the winter term
Feb. 8	Thursday	Stated meeting of the Board of Trustees
Feb. 16	Friday	Last day on which candidates may file thesis subjects for the Master's degrees to be conferred in May
Feb. 22	Thursday	Winter Convocation. Holiday
March 1	Thursday	Applications for fellowships for 1951-52 should be filed
March 8	Thursday	Stated meeting of the Board of Trustees
March 20	Tuesday	Meeting of the University Faculty
March 23 and 24	Friday and Saturday...	Easter recess
April 13	Friday	Last day for receiving dissertations of candidates for the degrees of Doctor of Philosophy, Doctor of Juridical Science, and Doctor of Education to be conferred in May
		Last day on which candidates may file dissertation subjects for the degrees of Doctor of Philosophy, Doctor of Juridical Science, and Doctor of Education to be conferred the following February
April 14	Saturday	Last day for applications for degrees to be conferred in May
		Foreign-language examinations for candidates for the Master's degrees
April 24	Tuesday	Meeting of the Academic Council
May 1	Tuesday	Applications for scholarships for 1951-52 should be filed

THE UNIVERSITY CALENDAR—Continued

Date	Day	Occasion
May 2	Wednesday	Last day for receiving theses of candidates for the Master's degrees and for the professional degrees in Engineering to be conferred in May
May 15	Tuesday	Last day of classes for the winter term
May 16-24	Wednesday through Thursday	Winter term examination period
May 17	Thursday	Annual meeting of the Board of Trustees
May 27	Sunday	Baccalaureate Sermon
May 30	Wednesday	Commencement
SUMMER TERM:*		
June 4	Monday	Registration of new students for the first session and the fifteen-week term of the summer term
June 5	Tuesday	Classes begin
July 4	Wednesday	Independence Day. Holiday
July 30	Monday	First summer session ends
July 31	Tuesday	Registration for the second session of the summer term
Aug. 1	Wednesday	Classes begin
Aug. 6	Monday	Last day for applications for degrees to be conferred in November
Aug. 25	Saturday	Foreign-language examinations for candidates for the Master's degrees
Sept. 3	Monday	Labor Day. Holiday
Sept. 14	Friday	Fifteen-week term ends
Sept. 21	Friday	Second summer session ends
		Last day for receiving theses for the Master's degrees and for the professional degrees in Engineering to be conferred in November
Sept. 24	Monday	Last day for receiving dissertations of candidates for the degrees of Doctor of Philosophy, Doctor of Juridical Science, and Doctor of Education to be conferred in November.
Sept. 26-28	Wednesday through Friday	Registration for the fall term of the academic year 1951-52

* The calendar for the Law School is as follows. First session, June 4-July 31; Second Session, August 1-September 25.
 The calendar for the special sessions of the School of Education is as follows: Pre-session, June 11-30; Six-Week Session, July 2-August 11; Post-session, August 12-31. Registration for each of these sessions is on the first day of classes.

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xxxiii

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iv

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ELIZABETH MAPLESDEN RAMSEY, A.B., M.D. <i>Professorial Lecturer in Pathology</i>	3420 Q St.
HENRY RAPPAPORT, M.D. <i>Professorial Lecturer in Pathology</i>	2130 Taft St. N. Arlington, Va.
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HANS FRANK SMETANA, M.D. <i>Professorial Lecturer in Pathology</i>	6100 14th St.
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CLARK HARVEY YEAGER, M.D., Dr.P.H. <i>Professorial Lecturer on Tropical Medicine</i>	13 Midvale Rd. Baltimore, Md.

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ASSISTANTS IN RESEARCH AND INSTRUCTION

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DAVID HARGIS BARKER, B.S., M.D. <i>Research Fellow in Infectious Diseases</i>	1533 W. Falkland Lane Silver Spring, Md.
JOHN EDMOND BECHTOLD, A.B., M.D. <i>Research Fellow in Cardiology</i>	1335 H St.
JEAN ELIZABETH BENTON, A.M. <i>Teaching Fellow in History</i>	711 Elm St. Chevy Chase, Md.
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Lois Carolyn Lord, A.M., *Secretary in the Office of Student Activities*
Priscilla Frances Hufford, *Secretary, Office of the Director of Activities for Women*

Dorothy Louise Chaddock, *Secretary to the Director of Activities for Men*

Roberta Cregier Lush, *Secretary, Office of the Director of Activities for Men*

Myrtle Leona Dozier, *Stenographer, Office of Director of Activities for Men*

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William Jennings Reinhart, B.B.A., *Head Baseball and Head Basketball Coach*

Eugene Hugh Sherman, Sr., B.S., *Assistant Football Coach and Freshman Basketball Coach*

Roger Antaya, A.M., *Assistant Football Coach*

Timothy Swett, B.S., *Assistant Football Coach*

Mike Monchlovich, B.S., *Athletic Trainer*

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Grace Ruble Harmon, *Associate Director of the Glee Clubs*

Leon Brusiloff, *Director of The George Washington University Band*

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Jessie Ramsey Lee, *Hostess in Staughton Hall*

Virginia Randolph Kirkbride, A.M., *Hostess in Sorority Hall, 2129 G Street*

Helen Poljacik, *Hostess, Residence Hall for Women, 2025 H Street*

THE UNIVERSITY

HISTORY AND ORGANIZATION

HISTORY

The idea of a university located in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

It was George Washington's hope that the "General Government" would extend toward such an institution "a fostering hand". No steps were taken by Congress to carry out the provision of Washington's will, and the stock that he had bequeathed for the establishment of a university in the District of Columbia became valueless owing to the failure of the Potomac Canal properties.

Meanwhile, however, a movement was started by private persons under the leadership of Luther Rice to establish an institution of higher learning at the seat of the National Government for the education of the Baptist ministry and to afford general collegiate training. In 1819 an association was formed by Luther Rice, Obadiah B. Brown, Spencer H. Cone, and Enoch Reynolds for the purpose of raising funds to buy land for the use of the college.

A group of the Nation's leaders who were especially interested in Washington's idea became patrons of the college and contributed to funds raised for the purchase of land and erection of buildings. Among them were James Monroe, President of the United States; William H. Crawford, Secretary of the Treasury; John C. Calhoun, Secretary of War; William Wirt, Attorney General; Return J. Meigs, Postmaster General; and thirty-two members of the Congress.

Legally to implement the college a petition was made to Congress for the incorporation of "the General Convention of the Baptist Denomination in the District of Columbia for evangelical and literary purposes". This petition was denied by Congress, on April 26, 1820, because of its sectarian character.

Failing to obtain a denominational charter, members of the association enlarged their objective to embrace national aims, and with the sponsorship of Government leaders there was presented in Congress a bill for the incorporation of "the Columbian Society for literary pur-

poses", it being proposed to realize in this way "the aspirations of Washington, Jefferson and Madison for the erection of a university at the seat of the federal government".

Acting upon this second petition, on February 9, 1821, Congress chartered Columbian College in the District of Columbia, inserting in the charter by special action the provision "That persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College or denied any of the privileges, immunities or advantages thereof, for or on account of his sentiments in matters of religion".

Thus Columbian College in the District of Columbia was chartered by Congress as one of the early nonsectarian institutions of higher learning in the United States, under the distinguished favor of President James Monroe and members of his Cabinet.

A tract of approximately forty-seven acres, extending about one-half mile northwest of Boundary Street (Florida Avenue) between 14th and 15th Streets, was purchased and by 1822 the main building was completed sufficiently to use.

Two years later, when the first Commencement was held on December 15, 1824, Congress and the Supreme Court adjourned their sessions to enable their members to attend the exercises. President Monroe, John Quincy Adams, John C. Calhoun, Henry Clay, and the Marquis de Lafayette headed the eminent company in attendance.

By an act of Congress of March 3, 1873, the name of the college was changed to "Columbian University", in recognition of the enlarged scope of the institution. In 1884 the University was moved from its first location on "College Hill"; now Columbia Heights, to the new University Hall built for it at Fifteenth and H Streets. Near-by buildings accommodated the School of Medicine and, somewhat later, the Law School.

For a period of six years, from 1898 to 1904, the University was placed under control of the Baptist Denomination. In 1904 an act restoring the original secular character of the University and authorizing change of name to The George Washington University was passed by Congress.

Subsequently all the colleges, schools, and divisions of the University except the School of Medicine were brought together in the area bounded by Nineteenth, Twenty-third, and G Streets, and Pennsylvania Avenue NW. The School of Medicine is situated on H Street between Thirteenth and Fourteenth Streets NW.

The endowment of the University is \$2,900,000.

In 1930 a new plan of academic organization for the liberal arts work was effected in the establishment of the Junior College and the redefining of graduate work, as indicated below.

THE COLLEGES, SCHOOLS, AND DIVISIONS

The George Washington University includes twelve colleges, schools, and divisions, as follows:

The Junior College offers the work of the first two years of the four-year college program in the liberal arts and sciences; two years of pre-professional work; and two-year terminal courses. Each of these curricula leads to the degree of Associate in Arts.

Columbian College offers the work of the junior and senior years of the four-year college program in the liberal arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. It also offers the studies leading to the degrees of Master of Arts and Master of Science in the fields of the liberal arts and sciences.

The Graduate Council offers a program of advanced study and research leading to the degree of Doctor of Philosophy.

The School of Medicine offers work leading to the degree of Doctor of Medicine.

The Law School offers professional and graduate courses leading to the degrees of Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

The School of Engineering offers courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering. It also directs work leading to the professional degrees in the fields of civil, electrical, and mechanical engineering.

The School of Pharmacy offers courses leading to the degrees of Bachelor of Science in Pharmacy and Master of Science in Pharmacy.

The School of Education offers undergraduate programs leading to the degrees of Bachelor of Arts in Education, Bachelor of Science in Home Economics, and Bachelor of Science in Physical Education, and graduate studies leading to the degrees of Master of Arts in Education and Doctor of Education.

The School of Government offers undergraduate programs of study in Foreign Affairs, Accounting, Business Administration, and Statistics, leading to the degree of Bachelor of Arts in Government. Graduate work leading to the degree of Master of Arts in Government is offered in these fields and also in Government and Economic Policy, Public Administration, Personnel Administration, and Vocational Counseling.

The Division of University Students makes available courses for mature students, not candidates for degrees in this University.

The Division of Special Students makes available courses for students in the process of qualifying for degree candidacy.

The Summer Sessions.

ACADEMIC STATUS

The George Washington University is on the final approved list of the Association of American Universities. This fact not only assures to students the academic standards of this association, but also is important to those who desire to transfer credits from one institution to another.

The University is also accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools, and is on the approved list of the American Association of University Women. The University is a member of the College Entrance Examination Board.

The Law School is a charter member of the Association of American Law Schools and is approved by the Council of Legal Education of the American Bar Association. The School of Medicine is a member of the Association of American Medical Colleges, is one of the medical colleges which have been designated continuously as "class A" by the American Medical Association, and is credited for all its work by the Combined (Royal) Medical Examining Boards in England. The School of Pharmacy is accredited by the American Council on Pharmaceutical Education and is a member of the American Association of Colleges of Pharmacy. The School of Engineering is on the accredited list of the Engineers' Council for Professional Development.

LOCATION

The George Washington University is in downtown Washington, four blocks west of the White House and east of the Potomac River with its extensive parkway. Readily accessible to the University are many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Army, the Department of the Navy, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor, as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Gallery of Art, and the Corcoran Gallery of Art.

GOVERNMENT

The government and general educational management of The George Washington University are vested in a self-perpetuating Board of Trustees, with the President and Vice-President of the University as members ex officio. The members of the Board are named for a period of three years and are divided into three classes. The members of one class are elected at each annual meeting to fill the places of the members whose terms of office expire. Two members of each class are nominated by the Alumni Association.

EDUCATIONAL FACILITIES

BUILDINGS

Buildings, grounds, and equipment are valued at approximately \$17,000,000.

The buildings of the Junior College, Columbian College, the Graduate Council, the Law School, the School of Engineering, the School of Pharmacy, the School of Education, the School of Government, the Division of University Students, the Division of Special Students, and the University Hospital and Outpatient Department are located between Nineteenth and Twenty-third Streets and between Pennsylvania Avenue and G Street. The School of Medicine is at Fourteenth and H Streets NW. The buildings of the University are as follows:

- Cancer Clinic, 1339 H Street.
Corcoran Hall, 725 Twenty-first Street. Named in honor of the late William W. Corcoran, benefactor of the University and a former member of the Board of Trustees. Offices of the Comptroller, the departments of Chemistry, Electrical Engineering, and Physics; the chemistry, electrical engineering, and physics laboratories; classrooms.
Everglades Apartments, 2223 H Street, a residence hall for nurses.
Faculty Club House, 714 Twenty-first Street.
Gymnasium, 2010-12 H Street.
Hall of Government, 710 Twenty-first Street. The gift of Mrs. Henry Alvah Strong, Trustee of the University. Offices of the Dean of the School of Government, the departments of Business Administration, Economics, History, Political Science, and Statistics; classrooms.
Hospital and Outpatient Department, Washington Circle.
International House, 2116 G Street. Office of the Adviser to Students from Foreign Countries; club rooms.
Lisner Auditorium, 730 Twenty-first Street. The gift of the late Abram Lisner, former Trustee of the University. The Auditorium; Lisner Lounge; offices and classrooms of the Department of Speech.
Mechanical Engineering Building, 735 Twenty-first Street. Offices of the departments of Electrical and Mechanical Engineering; engineering testing laboratories, general laboratories, drafting rooms, and classrooms.
Office of the President, 2003 G Street.
Office of the Vice-President, 2003 G Street.
Placement Office, 724 Twenty-second Street.
School of Medicine, 1335 H Street. Offices of the Staff of the School of Medicine; anatomy, bacteriology, biochemistry, histology and embryology, pathology, pharmacology, and physiology laboratories; the Medical Library; lecture rooms; classrooms; students' rooms.
Sorority Halls:
2129 G Street. Apartments of Pi Beta Phi, Sigma Kappa, Phi Mu, Alpha Delta Pi, Delta Zeta, Zeta Tau Alpha, and Kappa Kappa Gamma sororities.
2131 G Street. Apartments of Delta Gamma Sorority and Martha Washington Club.
802 Twenty-first Street. Apartments of Chi Omega and Phi Sigma Sigma sororities.

- 2112 G Street. Apartments of Kappa Alpha Theta and Kappa Delta sororities.
- Staughton Residence Hall for Women, 707 Twenty-second Street. Named in honor of William Staughton, the first President of the University (1821-1827).
- Stockton Hall, 720 Twentieth Street. Named in honor of the late Rear Admiral Charles Herbert Stockton, President of the University from 1910 to 1918.
- Offices, library, and lecture halls of the Law School.
- Strong Residence Hall for Women, 620 Twenty-first Street. Named in honor of the donor, Mrs. Henry Alvah Strong.
- Student Union, 2125 G Street. Offices of student organizations; student cafeteria and snack bar, reading room, lounge, game and music rooms.
- University Cooperative Store, 2120 H Street.
- University Library, 2023 G Street. The gift of the late Abram Lisner, former Trustee of the University. The library; rooms of the Board of Trustees and the Graduate Council.
- Veterans' Club, 722 Twenty-second Street.
- Washington Counseling Center, 2011 H Street.
- Welling Hall, 814 Twenty-second Street. Residence Hall for Men. Named in honor of the late James Clarke Welling, President of the University from 1871 to 1894.
- Woodhull House, 2033 G Street. Gift of the late General Maxwell Van Zandt Woodhull, former Trustee of the University. Office of the Director of Activities for Women; meeting rooms for student activities and the Columbian Women.
- Building A, 2026 G Street. Offices of the Department of Romance Languages.
- Building B, 2024 G Street. Offices, laboratories, and classrooms of the Department of Home Economics.
- Building C, 2029 G Street. Offices of the Registrar and the Director of Admissions; offices and laboratories of the departments of Biology, Botany, and Zoology; classrooms.
- Building D, 2013 G Street. Offices of the Dean of the Junior College, the Dean of Columbian College, the Dean of the Division of University Students, the Dean of the School of Education, and the Business Manager; offices of the departments of Art, Classical Languages, Education, English (English Literature), Germanic Languages, Journalism, Mathematics, Philosophy, Psychology, Secretarial Studies, and Sociology; classrooms.
- Building F 2018 I Street. Offices of the Director of Alumni Relations and the Director of Public Relations.
- Building G, 712 Twentieth Street. Offices of the Department of English (Composition section).
- Building H, 714-16 Twentieth Street. Offices and locker rooms of the Department of Physical Education for Women.
- Building I, 2135 G Street. Offices, classrooms, and laboratories of the Department of Geography.
- Buildings J and L, 2131 and 2129 G Street (rear). Classroom and locker rooms of the Department of Physical Education for Women.
- Buildings M and N, 716-18 Twenty-first Street. Offices of the Dean of the School of Engineering and the Department of Civil Engineering.
- Building O, 2106 G Street. Office of the Department of Religion.
- Building P, 2108 G Street. Offices of the Student Health Service and the Dean of the Division of Special Students.
- Building Q, 2029 H Street. Office of the Director of Veterans Education.
- Building R, 2027 H Street. Offices of the Director of Activities for Men, the Department of Physical Education for Men, and the Athletic Staff.
- Building S, 2025 H Street. Residence Hall for Women.

Building U, 720 Twenty-second Street. Reading Clinic.
Building V, 2114 H Street (rear). Laboratories and classrooms of the Department of Physics.
Building W, 2128 H Street. Offices of the School of Pharmacy; pharmacy laboratories; classrooms.
Building X, 725 Twenty-third Street. Drafting rooms and classrooms of the School of Engineering.
Building Y, 2031 H Street. Offices of the departments of English (American Literature section) and Sociology.

THE UNIVERSITY LIBRARY

The University Library contains more than 175,000 volumes. The well equipped Library building houses all of the library except the law and medical collections. Over 6,000 bound volumes are added annually, and approximately 900 periodicals and publications of learned societies are received currently. Among the special collections of the Library are the Richard Heinzel Collection of Germanic philology and literature; the Curt Wachsmuth Collection of Greek and Roman literature, archeology, and history; the Mount Vernon Collection on political history, international law, and the social sciences; a representative collection of Spanish American books, the gift of the governments of Hispanic America; the Chauncey Mitchell Depew Public Speaking Collection, the gift of the late Mrs. Depew; and the Art Collection, which contains about 1,000 volumes made available by the American Institute of Architects, and the 7,500 mounted photographs of the Russell Sturgis Collection.

OTHER LIBRARY FACILITIES

The student has access also to the Library of Congress; the Public Library of the District of Columbia and its branches; the Library of the Pan American Union; the Library of the Bureau of Railway Economics; the Library of the United States Department of Agriculture; the Library of the United States Office of Education; the Army Medical Library; the Library of the Smithsonian Institution; and many of the other great special collections of the government departments.

GOVERNMENTAL INSTITUTIONS ACCESSIBLE TO STUDENTS

The congress of the United States has made the scientific resources of the Government accessible to students under the terms of the following joint resolution, approved April 12, 1892:

Resolved by the Senate and House of Representatives of the United States of America, in Congress assembled, That the facilities for research and illustration in the following and any other Governmental collections now existing or hereafter to be established in the city of Washington for the promotion of knowledge shall be accessible, under such rules and restrictions as the officers in charge of each

collection may prescribe, subject to such authority as is now or may hereafter be permitted by law, to the scientific investigators and to students of any institution of higher education now incorporated or hereafter to be incorporated under the laws of Congress or of the District of Columbia, to wit:

- One. Of the Library of Congress.
- Two. Of the National Museum.
- Three. Of the Patent Office.
- Four. Of the Bureau of Education.
- Five. Of the Bureau of Ethnology.
- Six. Of the Army Medical Museum.
- Seven. Of the Department of Agriculture.
- Eight. Of the Fish Commission.
- Nine. Of the Botanic Gardens.
- Ten. Of the Coast and Geodetic Survey.
- Eleven. Of the Geological Survey.

ADMISSION

All departments of the University accept men and women.

Students may enter any college, school, or division of the University except the School of Medicine at the beginning of the fall term, the winter term, or any of the sessions of the summer term.

Entrance to the School of Medicine in 1950-51 is permitted only at the opening of the term beginning September 1950.

GENERAL ADMISSION REQUIREMENTS

The following factors are considered in determining the eligibility of an applicant for admission:

1. The adequacy of previous academic work as preparation for the course of study now contemplated—including quantity and quality of work and the standing of the institution in which it was done.
2. The aptitude of the student for the course contemplated.
3. The character of the student.

The University reserves the right to refuse admission to any student who has a previous academic record of such grade as to create doubt of his ability to pursue college work successfully, or who for any other reason would not be a desirable student.

APPLICATION FOR ADMISSION

An applicant for admission must obtain from the Office of the Director of Admissions an application blank which he must fill out completely and return with the application fee of \$3. A recent photograph, with signature, of the applicant must be attached to the blank.

Applications should be filed not later than July 1 for the fall term, January 1 for the winter term, and May 1 for the summer term.

An applicant from a secondary school must send the high school record form provided by the University to his high school principal with the request that the principal fill out the form and mail it direct to the Office of the Director of Admissions.

An applicant who has previously attended an institution of higher learning must request the registrar of that institution to mail directly to the Office of the Director of Admissions a transcript of his record. If he has attended more than one such institution he must request the registrar of each institution to send to the Office of the Director of Admissions a transcript of his record, even though credits were not earned, together with an honorable dismissal from the institution last attended.

The Graduate Record Examination sponsored by the Carnegie Foundation for the Advancement of Teaching is accepted as supplemental evidence of the applicant's educational attainment, and the appropriate report should accompany the application for admission whenever available.

METHODS OF ADMISSION

FROM SECONDARY SCHOOLS

An applicant from a secondary school may seek to qualify for admission by certificate or examination.

By Certificate

A certificate of graduation with a minimum of fifteen "units" * from an accredited secondary school and the recommendation from the principal of the secondary school that the applicant is prepared to undertake college work will be considered subject to the following conditions:

1. If the school is accredited by the regional accrediting association, the student must rank not lower than the third fifth of his class.
2. If the school is not listed by the regional accrediting association, but has been accredited by the state accrediting agency, the student must rank in the upper two fifths of his class.

By College Entrance Board Examinations

An applicant may qualify by passing satisfactorily College Entrance Board examinations as prescribed by the Director of Admissions. These examinations are given at The George Washington University on June 3, 1950; August 23, 1950; December 2, 1950; January 13, 1951, March 10, 1951; May 19, 1951; and August 15, 1951.

Arrangements for the examinations should be made with the College Entrance Examination Board, Post Office Box 592, Princeton, N. J., not less than one month before the date of the examinations.

FROM HIGHER INSTITUTIONS ‡

An applicant for advanced standing may be considered for admission upon the presentation of satisfactory credentials from an accredited institution of higher learning. The student must be in good standing as to scholarship and conduct, and must be eligible to return to the previously attended institution in the term for which he seeks admission to this University.

If the transcript of record from such an institution includes the record

* A unit represents a year's study in a secondary school subject, including in the aggregate not less than 120 sixty-minute periods of prepared classroom work.

‡ The University reserves the right to refuse advance credit in whole or in part, or to allow it provisionally. Credit so given may be withdrawn for subsequent poor work.

of his secondary school work, it is not necessary for the applicant to have forwarded a separate record directly from the principal of the secondary school. High school work is considered only as fulfilling entrance requirements; it is never credited toward advanced standing.

Properly certified courses taken at accredited colleges or universities may be applied toward a degree at this University, subject to the curriculum requirements and regulations of the school or college to which admission is sought. Work of low pass grade (such as *D* or the equivalent) will not be considered for transfer.

ENTRANCE REQUIREMENTS

THE JUNIOR COLLEGE

An acceptable certificate of graduation from an accredited secondary school, or the satisfactory passing of College Entrance Board examinations selected with the approval of the Director of Admissions is required. (See "Methods of Admission".)

Distribution of Units for All Curricula except Premedical.—Except for admission to the premedical curriculum, certification by the principal that the student has satisfied all curriculum requirements of the school will be accepted in lieu of any prescribed distribution of units. Attention is called, however, to the necessity of completing stated prerequisite studies during the secondary school period for admission to certain curricula. It is to be noted that one unit of algebra is prerequisite to courses in chemistry, mathematics, physics, and statistics and that in addition one unit of plane geometry is prerequisite to courses in mathematics and physics. In the instance of applicants who do not meet the above stated mathematics requirements, algebra and plane geometry may be taken without college credit when offered by the Department of Mathematics. For a statement of the foreign language requirements see page 55.

Distribution of Units for the Premedical Curriculum.—The several state medical boards govern the granting of licenses to practice; hence their requirements as to high school credits must be met exactly. The fifteen units required must include three in English, two in one foreign language, one in algebra, one in geometry, one in history, and one in science (biology, botany, chemistry, or physics). Eleven of the units offered must be in the above subjects.

COLUMBIAN COLLEGE (THE SENIOR COLLEGE)

For the Bachelor's Degrees

Two years of Junior College work leading to the degree of Associate in Arts, or the lower-division work in institutions not organized on the

junior-senior-college plan, following a specified curriculum, meet the minimum requirements of Columbian College. In addition, however, scholarship requirements for admission may be set somewhat higher than those for graduation from the Junior College.

Bachelor of Arts.—An Associate in Arts degree based on the *Arts and Letters* curriculum in the Junior College, or the equivalent (see page 56), is required.

Bachelor of Science.—An Associate in Arts degree based on the *Science* curriculum in the Junior College, or the equivalent (see pages 56-57), is required.

For the Master's Degrees

An approved Bachelor's degree from an accredited higher institution is required. A student from an unaccredited institution may be admitted at the discretion of the Committee on Admission and Advanced Standing, but he will be required to take such extra work above the minimum requirements as may be prescribed. An appropriate distribution of courses and a superior quality of work in the major field are essential.

Applications for admission must be approved by the department or division and by the Dean.

Master of Arts.—The student's undergraduate curriculum must have included a program of study substantially equivalent to a major in his chosen field, together with an appropriate distribution of courses in other fields, or he must complete this prerequisite work in addition to that required for the Master's degree.

Master of Science.—The student's undergraduate curriculum must have included the equivalent of the undergraduate major of the scientific department under which he desires to work.

THE GRADUATE COUNCIL

Doctor of Philosophy.—The student must possess an adequate academic preparation for advanced study in the proposed field, as evidenced by approved Bachelor's and Master's degrees, or the equivalent, together with acceptable personal qualities and capacity for creative work.

THE SCHOOL OF MEDICINE

Doctor of Medicine.—Ninety credit hours of work, exclusive of physical education, in an accredited higher institution are required.

Specific Educational Requirements

SECONDARY SCHOOL REQUIREMENTS

Of the fifteen secondary school units required, three must be in English, two in one foreign language (ancient or modern), one in algebra,

one in geometry, one in history, and one in science (biology, botany, chemistry, or physics). Eleven of the units offered must be in English, foreign language, mathematics, science, and history.

PREMEDICAL COLLEGE REQUIREMENTS

NINETY CREDIT HOURS

1. Chemistry, sixteen credit hours as follows: (a) eight hours in general inorganic chemistry, of which at least four credit hours are laboratory work (qualitative analysis may be counted as general inorganic chemistry); (b) eight credit hours or a one-year college course of organic chemistry, including laboratory work.
2. Physics, eight credit hours, of which at least two credit hours are laboratory work. It is recommended that this course be preceded by one in trigonometry.
3. Biology, eight credit hours, of which at least four credit hours are laboratory work. This requirement may be satisfied by a course of eight credit hours in either general biology or zoology, or by four credit hours each in zoology and botany, but not by botany alone.
4. English composition and literature, six credit hours: the usual introductory college course or the equivalent. The student should develop facility in speaking and writing English.
5. Modern foreign language: a reading knowledge, preferably of French or German.
6. Electives. It is recommended that the remaining credit hours required include: (a) comparative vertebrate anatomy; (b) qualitative and quantitative chemical analysis; (c) social science and psychology.

Advanced Standing

A student who has satisfactorily attended one or two years at any other "class A" medical school, and who has the necessary preliminary educational requirements, may be admitted to advanced standing.

THE LAW SCHOOL

For the Degrees in the Professional Course

Bachelor of Laws.—A Bachelor's degree awarded upon completion of a four-year course in an approved college or university is required. All pre-legal work must be of a satisfactory quality and distribution. No student will be admitted who has been in attendance at another law school and who, because of poor scholarship, is on probation or is ineligible to return to that school. From the applicants fulfilling the basic requirement of a college degree, a selection will be made by the Committee on Admissions.

The Juris Doctor degree is conferred as a recognition of completion

with high rank of the full professional course, including experience in research and legal authorship. A student does not register as a candidate for this degree until his last year in the Law School.

ADVANCED STANDING

Advanced standing toward the degree of Bachelor of Laws may be granted only for work successfully completed in other Law Schools which are members of the Association of American Law Schools.

Advanced standing may not be granted for law work already counted toward the Bachelor of Arts or other pre-legal degree.

Students planning to attend summer school sessions at other law schools and desiring to use credits obtained at such schools in their course at this Law School must first have the courses they wish to take approved by the Dean. In no event will credits be recognized in excess of those which might be obtained in a similar period in this School.

Advanced standing toward the degree of Juris Doctor will not be granted.

For the Degrees in the Graduate Course

Candidates for graduate degrees must be accepted by the Committee on Graduate Studies.

Master of Laws.—A Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree from an approved law school are required. Candidates for admission must have attained an average grade on all work done for the Bachelor of Laws degree equivalent to the relative position of a *B* average in the standards of grading at this Law School, except that, in the discretion of the Committee on Graduate Studies, applicants otherwise eligible may be admitted on proof of experience and attainment as an alternative to the showing of a general average of *B* in the formal law school grades.

Master of Comparative Law.—The following are required: (1) the successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycee, or liceo (junior college); and (2) graduation in law from a recognized foreign university where training was in Civil Law.

Doctor of Juridical Science.—The following are required: (1) the degree of Juris Doctor from this Law School; or (2) the degree of Bachelor of Arts from an approved college, the degree of Bachelor of Laws or the equivalent, earned with high rank, from an approved law school, outstanding capacity for scholarly work in the field of law, and acceptance as a candidate by the Committee on Graduate Studies of the Law School.

Unclassified Students

A person eligible for admission to regular standing but not a candidate for a degree may, at the discretion of the Dean, be admitted as an unclassified student.

A person who is in good standing as a candidate for a degree in another approved law school may, at the discretion of the Dean, be admitted as an unclassified student. Work taken by an unclassified student will not be accepted for credit toward a degree at this Law School.

THE SCHOOL OF ENGINEERING

Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering.

—An acceptable certificate of graduation from an accredited secondary school, or the satisfactory passing of College Entrance Board examinations in secondary school subjects selected with the approval of the Director of Admissions is required.

Nine and one-half of the fifteen units required for entrance must be distributed as follows: three in English, two in algebra, one in plane geometry, one-half in plane trigonometry, one in physics or chemistry, and two in one foreign language or history. A graduate of an approved high school who does not offer for admission the particular subjects required for the engineering curriculum, but who does present not less than fifteen acceptable units, may be admitted on condition, if such deficiency in the distribution of units does not exceed two units.

ADVANCED STANDING

Advanced standing may be granted for work successfully completed at accredited institutions of higher learning. Credit will be assigned by the School of Engineering to the extent that the work taken at previous institutions meets the requirements for the degree sought at this University, and subject to the general University regulations concerning satisfactory subsequent work.

THE SCHOOL OF PHARMACY

Bachelor of Science in Pharmacy.—An Associate in Arts degree based on the curriculum in *Pharmacy* in the Junior College (see page 57), or the equivalent is required.

A student who has received a Bachelor's degree from an accredited institution or who has completed work in the general cultural or foundational subjects of the pharmacy curriculum may be admitted to advanced standing. No more than one year of advanced standing will be granted a student from any institution other than an accredited college of pharmacy.

Master of Science in Pharmacy.—A Bachelor of Science degree from an accredited institution is required. A superior record and professional promise are essential.

THE SCHOOL OF EDUCATION For the Bachelor's Degrees

Bachelor of Arts in Education, Bachelor of Science in Home Economics, Bachelor of Science in Physical Education.—An Associate in Arts degree based on the *Education, Home Economics, or Physical Education* curriculum in the Junior College (see pages 57-59), or the equivalent from another accredited higher institution, or a certificate of graduation from an approved normal school or the equivalent is required.

For the Master's Degree

Master of Arts in Education.—To be admitted to candidacy for the degree of Master of Arts in Education the applicant must: (1) hold a Bachelor's degree from an accredited institution; (2) have an undergraduate quality-point index of 2.50 or above (C + average); (3) have demonstrated a genuine interest in teaching; (4) be in possession of personality traits that give promise of better-than-average success as a teacher.

To be admitted to candidacy in programs designed to prepare for service in guidance and administration two years of successful teaching experience are prerequisite.

For the Doctor's Degree

Doctor of Education.—The degree of Master of Arts in Education or the equivalent, and at least three years of satisfactory educational experience are required.

THE SCHOOL OF GOVERNMENT For the Bachelor's Degree

Bachelor of Arts in Government.—An Associate in Arts degree based on the *Accounting and Business Administration, Foreign Affairs, or Statistics* curriculum in the Junior College (see pages 59-60), or the equivalent, and a quality-point index of 2.00 for the first two years' work are required.

For the Master's Degree

Master of Arts in Government.—A Bachelor's degree from an accredited institution, or evidence of a course of study that is judged by the Faculty to be the equivalent is required. A student from an unaccredited institution may be admitted at the discretion of the Dean's Council, but he will be required to take such extra work above the minimum requirements as may be prescribed.

The Dean may permit deficiencies to be made up concurrently with work for the degree or by special examinations given under direction of a Faculty Committee. Students admitted to candidacy must have attained a quality-point index of 3.00 (a "B" average) in the courses of their undergraduate major. In special cases students who have not attained this scholastic average may take a qualifying examination with permission of the Dean.

THE DIVISION OF UNIVERSITY STUDENTS

Students 21 years of age or over who are not interested in working for a degree in this University may be considered for admission to the Division of University Students to take courses for which they have adequate preparation, as evidenced by previous scholastic records.

In special instances, with the permission of the instructor, a person may be considered for admission as an auditor in a class without being required to take active part in the exercises or to pass examinations, but no credit will be allowed for such attendance.

THE DIVISION OF SPECIAL STUDENTS

This is a non degree-granting division of the University in which the Director of Admissions may authorize the placement of students in the process of making up entrance deficiencies to degree-granting colleges and schools of the University.

Complete credentials must be submitted and evaluated before a tentative or definite plan of make-up may be prepared.

CLASSIFICATION OF STUDENTS

Regular Students.—Regular students are those who have met the entrance requirements for candidacy and are registered for degrees.

University Students.—Persons of mature age, as specified in the rules of the Division of University Students, may be admitted to this Division to pursue courses for which they have had adequate preparation.

Special Students.—Special students are those who are in the process of qualifying for admission to curricula in degree-granting colleges and schools of this University.

Additional information concerning curricula, courses offered, entrance requirements, or admission procedure may be obtained from the Office of the Director of Admissions.

REGISTRATION

Before a student may be admitted to registration he must have satisfied the Office of the Director of Admissions that he is qualified for entrance to the University. (See "Admission", pages 11-19.)

A student who has previously matriculated in the University, but who has not been in attendance during the term prior to registration, should file an application for readmission in advance of registration.

Registration is for the term unless otherwise indicated on the registration paper. No registration is accepted for less than a term or one summer session.

A student may not register concurrently in The George Washington University and another institution without the permission of the dean of the college, school, or division in which he is registered in The George Washington University. Allowance of credit for work done concurrently will be at the discretion of the appropriate Committee on Admission and Advanced Standing.

TIME AND PLACE OF REGISTRATION *

Registration is conducted during the following periods: *fall term*, September 27, 28, and 29; *winter term*, February 1 and 2. Registration, except for the Law School, is conducted in Building C, 2029 G Street NW.; for the Law School, in Stockton Hall, 720 Twentieth Street NW.

REGISTRATION CHANGES AND WITHDRAWALS

For regulations governing changes in registrations and withdrawals, see pages 23, 36-37.

* Registration for the School of Medicine is conducted at the School of Medicine, 1335 11 Street NW., between 11:00 A.M. and 5:00 P.M., September 14 and 15, 1950.

FEES AND FINANCIAL REGULATIONS

By authorization of the Board of Trustees, the following fees have been adopted:

TUITION FEES

For each credit hour for which the student registers (except work taken by a candidate for a Doctor's degree)*	\$12.00
For the degree of Doctor of Medicine, for two terms†	650.00
For the degree of Doctor of Philosophy:	
For work leading to and including the Council Fellowship examination§	360.00
For work leading to and including the final examination§	360.00
For the degree of Doctor of Education:	
For work leading to and including the general examination§	360.00
For work leading to and including the final examination§	360.00
For the degree of Doctor of Juridical Science:	
For work leading to and including the final examination§	360.00

ADDITIONAL COURSE FEES

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the term and, unless otherwise indicated, may be defrayed in three payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as are determined by the department concerned.

GRADUATION FEES

Wherein the degree of Associate in Arts is granted	\$10.00
Wherein a degree other than the Associate in Arts degree is granted	20.00

FEE FOR BINDING MASTER'S THESIS..... 4.00

FEE FOR THE PROFESSIONAL THESIS IN THE SCHOOL OF ENGINEERING.... 50.00
An annual fee; one half payable in advance at the time of each registration.

FEE FOR PRINTING AND FILING SUMMARY OF DOCTORAL DISSERTATION.... 50.00

* Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the second academic year, it must be registered for again, and tuition paid on the same basis as for a repeated course.

† Registration in the School of Medicine is for a period of two terms. After the student has entered the course of instruction he is obligated for the full tuition for two terms. No part of the tuition will be refunded upon withdrawal or dismissal for any cause.

§ When a limited schedule is carried which extends the time of either the preparation period or the examination period to more than one year, the proportionate part of the charge may be fixed by the Comptroller.

SPECIAL FEES

Application fee, charged all applicants for admission, non-refundable	\$3.00
Aptitude Test fee.....	1.00
Late-registration fee, charged each student who fails to register within the designated period.....	5.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration.....	5.00
Service fee, charged each student for late payment of tuition (see "Payment of Fees").....	1.00
Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees.....	5.00
Residence fee, charged each student wishing to maintain "in residence" status during any term of absence from the University or after completion of tuition requirements.....	12.00
For special physical examination.....	1.00
Student Bar Association fee, charged each student in the Law School for each term or any part thereof except the summer term.....	2.00
For each examination to qualify for advanced standing and for each special examination	5.00
Laboratory checkout fee, charged all students in chemistry and pharmacy courses who fail to check out of the laboratory by the time set by the instructor.....	2.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of three certified transcripts of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described under the Department of Health Administration. These privileges, however, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each term are due and payable in advance at the time of registration.

In exceptional cases, subject to the approval of the Comptroller, the student may sign a contract for term charges, except for fees payable in advance, permitting payments as follows:

Fall Term.—One third at the time of registration; one third on November 3; one third on December 4.

Winter Term.—One third at the time of registration; one third on March 3; one third on April 3.

A student who fails to meet payments when due, but who pays his fees on or before the tenth of the month in which payment is due, is charged a service fee of \$1. A student who fails to meet payments by the tenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A suspended student may not be reinstated for the term after two weeks from the date of suspension. Applications for reinstatement are to be made to the dean of the college, school, or division in which the student is registered.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the dean of the college, school, or division in which the student is registered. Notification to an instructor is not an acceptable notice (see "Withdrawal", pages 37 and 38).

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Term.—Withdrawal dated on or before October 31, cancellation of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Winter Term.—Withdrawal dated on or before February 28, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and the course is dropped before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the term for which a registration charge is incurred and in no case will this payment be credited to another term.

Any student in chemistry who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a checkout fee in the amount of \$2. A student who drops a course before the end of the term must check out of the laboratory at the next regular laboratory period.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

FELLOWSHIPS, SCHOLARSHIPS, PRIZES, FINANCIAL AID

FELLOWSHIPS

The following fellowships are available to graduate students. Applications should be submitted for consideration not later than April 1 preceding the period for which the fellowship is to be awarded.

The applicant for a University Teaching Fellowship or a Special Fellowship is expected to be a prospective candidate for the degree of Doctor of Philosophy, and to have the Master of Arts degree, or the equivalent, in the general field of his future doctoral study and research. Forms on which to make application for these fellowships may be obtained from the Chairman of the Graduate Council.

University Teaching Fellowships.—These are assigned for the academic year 1950-51 in the following departments of instruction: Bacteriology, Biochemistry, Botany, Chemistry, Economics, English, History, Physics, Psychology, Romance Languages, and Statistics. Each fellow receives an annual stipend, plus full tuition in the Graduate Council for whatever schedule of study or research his fellowship duties permit him to carry. The occupant of each of these fellowships renders a designated unit of service to the department of instruction in his major field of doctoral study, usually in classroom or laboratory assignments.

Special Fellowships.—A number of special fellowships are supported by endowment, and are awarded to doctoral students of unusual promise and ability. The stipend is not fixed but varies in amount with the need of the individual receiving the award. In applying for one of these fellowships it is advantageous that the student appear personally for an interview with the Chairman and such other members of the Graduate Council as would be interested in the research investigations proposed. These fellowships include the following:

Isabella King Research Fellowship.—Of the value of \$1,200 annually, offered in the general field of biology, and intended to foster research for which the libraries and scientific establishments in Washington provide special facilities.

Thomas Bradford Sanders Fellowships.—Established by Miss Addie Sanders in memory of her brother, Thomas Bradford Sanders, and offered in various academic fields of study, with stipends designated by the Chairman of the Graduate Council.

Soroptimist Fellowship.—This fellowship of \$750 was established in 1948 by the South Atlantic Region of the American Federation of

Soroptimist Clubs, an international organization of executive business and professional women. It is available to a woman who holds a baccalaureate degree and who wishes to undertake graduate work to prepare herself for professional service. Selection of the candidate will be based upon the personal and academic qualifications of the applicant. Application should be addressed to the Registrar of the University.

SCHOLARSHIPS

Scholarships are awarded for two terms unless otherwise specified and are credited in equal parts for each term. Each holder must carry a full schedule of academic work (fifteen credit hours or in the professional schools the full prescribed schedule) during the period for which the scholarship is awarded. Except in the case of the High School Scholarships, the Student Activities Scholarships, the Trustee Scholarships, the National League of Masonic Clubs Scholarship, and the National Society of Arts and Letters Scholarship, applicants must have established an academic record in courses at this institution, and should apply on prescribed forms which must be filed in the Office of the Chairman of the Committee on Student Loans and Scholarships not later than May 1 preceding the academic year for which the scholarship is to be awarded. Further information may be obtained from the Chairman of the Committee on Student Loans and Scholarships.

Byron Andrews Scholarship.—This scholarship, in the amount of \$150, established in 1920 by Mrs. Belle Fisk Andrews in memory of her husband, Byron Andrews, is available "for ambitious and needy students, who desire to pursue courses in English, Latin, journalism, history, literature, or political science".

Anna Bartsch Scholarship.—This scholarship, in the amount of \$500, established in 1946 by Dr. Anna Bartsch-Dunne, as a memorial to her mother, Anna Bartsch, is awarded annually to a woman in the School of Medicine, "of outstanding scholarship, character, and promise, who intends to make the practice of medicine her life profession". The award is made upon the recommendation of the Faculty of the School of Medicine.

Emma K. Carr Scholarships.—Five scholarships in the amount of \$360 each and seven in the amount of \$100 each, established in 1932 by Mrs. Emma K. Carr, are awarded annually to "young men (of the white race) for undergraduate or postgraduate work, considering character, capacity, and need".

Henry Harding Carter Scholarship.—This scholarship, established in 1896 by Mrs. Maria M. Carter in memory of her husband, Henry Harding Carter, is of the annual value of \$360 and is awarded to a deserving student who is preparing for the civil-engineering profession.

Maria M. Carter Scholarship.—This scholarship, in the amount of \$50 to be awarded annually to a young man, was given to the University in 1871 by Mrs. Maria M. Carter.

Isaac Davis Scholarship.—This scholarship, in the amount of \$50 to be awarded annually, was given to the University in October 1869 by the Honorable Isaac Davis, of Massachusetts. Nominations for the scholarship may be made "by the founder or his eldest lineal descendant". In case no such nomination is made, the scholarship is to be awarded by the University.

Charles Worthington Dorsey Memorial Scholarship.—This scholarship, established as a memorial to Charles Worthington Dorsey, Bachelor of Laws, '81, Master of Laws, '82, is awarded upon the recommendation of the Faculty of the Law School to a needy and promising graduate of Columbian College or other division of the University, with a Bachelor of Arts or other equivalent degree, who has maintained an average of *B* as an undergraduate student and who desires to pursue the study of law as a full-time student. The scholarship covers tuition for the course leading to the first degree from the Law School, Bachelor of Laws or Juris Doctor, provided that the holder maintains an average of *B*. The right is reserved to suspend the benefits of the scholarship for cause at any time. The scholarship is awarded ordinarily once every three years.

Robert Farnham Scholarship.—This scholarship, in the amount of \$50 to be awarded annually to a student in Columbian College, was given to the University in 1871 by Mrs. Robert Farnham.

Anna Spicker Hampel Scholarship.—This scholarship, in the amount of \$20, established in 1949 by Mrs. Evelyn Hampel Young, is available for scholarship aid to young married women students in the School of Education or Columbian College.

Elma Lewis Harvey Scholarship.—This scholarship, of the annual value of \$100, was founded in 1921 by Mrs. Emma Elizabeth Harvey in memory of her daughter, and is to be awarded every four years, or as often as vacant, to a young woman student in Columbia College of the Protestant faith and of the Caucasian race who shall be selected for scholarship and moral qualifications.

High School Scholarships.—For rules governing the award of scholarships available to high school students, see the special bulletin.

The holders of these scholarships are exempt from tuition fees, but are charged laboratory, graduation, and other fees. The scholarships are valid for four academic years of undergraduate study. The principal, or, if the principal declines, the alternate, must register in September following the award.

To retain any high school scholarship a student must carry a full program of study in the liberal arts (a full program being defined as at

least fifteen hours of work each term). An average of *B* and a high standard of deportment must be maintained. Scholarships are reassigned annually. After registering, the holder of a high school scholarship is expected to complete four academic years in the University. If he fails to continue its use, the scholarship will not be reassigned.

A. Morehouse Scholarship.—This scholarship was established by Mr. A. Morehouse in 1861. It carries an annual stipend of \$100, which is available for an undergraduate "intending to enter the Christian ministry".

The National League of Masonic Clubs Scholarship.—This four-year scholarship, in the amount of \$400 annually to be applied toward payment of tuition costs only, is offered by the National League of Masonic Clubs to the son or daughter of a Master Mason. To continue to hold the scholarship, the student must maintain a satisfactory academic record.

National Society of Arts and Letters Scholarship.—An annual scholarship in the amount of \$200 is offered by the Washington Chapter of the National Society of Arts and Letters to a junior or senior majoring in drama.

Newspaper Scholarships.—Four scholarships are to be awarded each year to candidates recommended by the following newspapers: *The Washington Daily News*, *The Washington Post*, *The Evening Star*, and *The Times-Herald*. These scholarships cover tuition for four years, but do not include laboratory fees, graduation fees, or other special fees.

Paul Pearson Scholarship.—This scholarship, established in 1940 by bequest of Paul Pearson and "to be known as the Dr. Paul Pearson award", is in the amount of \$125 to be awarded annually to a student in the School of Pharmacy, upon the recommendation of the Faculty of that School.

Lula M. Shepard Scholarship.—This scholarship, established in 1946 by bequest of Lula M. Shepard, is in the amount of \$360 and is awarded annually to a "worthy Protestant student desiring to enter the Foreign Service Department of the School of Government".

David Spencer Scholarship.—This scholarship of \$150 was established in 1918 by Miss Louisa J. Spencer.

Mary Lowell Stone Scholarship.—This memorial scholarship, established in 1893 is in the amount of \$100, and is awarded annually to a woman student of science in Columbian College.

Student Activities Scholarships.—The University has established a limited number of Activities Scholarships for men, which will be awarded to approved applicants therefor by the Faculty Committee on Student Loans and Scholarships upon the basis of (1) need, (2) good character, (3) demonstrated aptitude for leadership, and (4) scholarship of the applicant.

Such scholarships are granted for one academic year. They may be continued, however, upon the basis on which they were granted. Recipients of Activities Scholarships must maintain the required scholastic average of the school or division in which they are registered.

The time for filing applications for Activities Scholarships and the terms of such scholarships may be ascertained by inquiry at the office of the Chairman of the Committee on Student Loans and Scholarships.

Charles Clinton Swisher Scholarship.—This scholarship, established in 1941 by the late Professor Charles Clinton Swisher, is in the amount of \$360 and is awarded annually to a student of medieval history.

Trustee Scholarships.—Five scholarships are awarded each year, upon the recommendation of regional alumni clubs, to outstanding male graduates of accredited high schools. The scholarships cover tuition costs for four terms of full-time work but do not include special fees such as laboratory charges, room, board, or other expenses. To retain the scholarship, the student must maintain a *B* average. Additional information may be obtained from the Alumni Secretary.

William Walker Scholarship.—This scholarship was established in 1824 by William Walker, Esq. It carries an annual stipend of \$150, which is available for an undergraduate intending to enter the Christian ministry.

John Withington Scholarship.—This scholarship was established in 1830 by the New York Baptist Theological Seminary. It has an annual stipend of \$100.

Ellen Woodhull Scholarship.—This scholarship, established by the late Ellen M. E. Woodhull, is in the amount of \$30, and is awarded annually to a student in Columbian College.

The Zonta Club of Washington, D. C., Scholarship.—This scholarship, in the amount of \$200, offered by the Zonta Club of Washington, D. C., will be awarded annually to a woman who is a senior or graduate student with special interest in a professional or business career.

THE COLUMBIAN WOMEN SCHOLARSHIP FUNDS

The Columbian Women Scholarships are awarded by the Scholarship Committee of the Columbian Women. Applications for these scholarships should be addressed to the Chairman of the Scholarship Committee, the Columbian Women, The George Washington University, Washington 6, D.C., not later than May 15 preceding the academic year for which the scholarship is to be awarded; or, in the case of award for the winter term, not later than January 1.

Nellie Maynard Knapp Scholarship Fund.—The income from this fund of \$5,000, established in 1915 in memory of a former president, Mrs. Martin A. Knapp, is available for scholarships for women.

Founders of Columbian Women Scholarship Fund.—The income from this fund of \$5,000, established in 1920, is available for scholarships.

Lillian Young Herron Scholarship Fund.—The income from this fund of \$5,000, established in 1925 and named in 1930 in memory of a former president, is available for scholarships.

Elizabeth V. Brown Scholarship Fund.—This fund of \$1,200 was established in 1925 by the College Women's Club of Washington, D.C., in memory of the late Elizabeth V. Brown. The income is available for a scholarship for a woman student in the School of Education.

College Women's Scholarship Fund.—The income from this fund of \$500, established in 1926 through the courtesy of the College Women's Club of Washington, D.C., is available for scholarship aid.

Lewes D. and Myrtie H. Wilson Memorial Scholarship Fund.—This fund of \$1,000 was established by Miss Elizabeth Wilson in 1926 as a memorial to her parents, Lewes D. and Myrtie H. Wilson. The income is available for a scholarship in the School of Medicine.

Grace Ross Chamberlin Scholarship Fund.—The income from this fund of \$2,300, established in 1932 in honor of a former president, is available for scholarship aid.

PRIZES

Alpha Chi Sigma Prizes.—Alpha Pi Chapter of Alpha Chi Sigma Fraternity offers annually the following prizes:

A "Handbook on Chemistry and Physics" is awarded to each of the three students who carry at least eighteen credit hours during the freshman year and attain the highest averages in freshman chemistry.

The name and year of graduation of the student who has attained the highest quality-point index in courses in chemistry will be inscribed on a bronze plaque. The winner of this award must have had at least sixteen hours of chemistry including the final term at The George Washington University.

Alpha Delta Pi Prize.—Alpha Pi Chapter of Alpha Delta Pi Fraternity offers an annual prize of \$10 to the woman member of the junior class with the most outstanding record in scholarship, extra-curricular activities, and service to the University.

Alpha Kappa Psi Prize.—Beta Mu Chapter of Alpha Kappa Psi Fraternity awards annually a key to the male student who has completed ninety credit hours at The George Washington University and has attained the highest average grade of the students enrolled in economics, business administration, public accounting, public finance, and foreign commerce.

American Institute of Chemists Prize.—The District of Columbia

Chapter of the American Institute of Chemists offers an annual prize of a medal and junior membership in the American Institute of Chemists to that graduating student, majoring in chemistry, who excels in scholarship and in the personal qualities of integrity and leadership.

Byrne Thurtell Burns Memorial Prize.—This prize, in the amount of \$50, is awarded to the senior majoring in chemistry who shows the greatest proficiency in organic chemistry, as evidenced by a comprehensive examination, and who possesses such qualifications of mind, character, and personality as to give promise of future achievement.

Chi Omega Prize.—Phi Alpha Chapter of Chi Omega Fraternity offers annually a prize of \$25 to be awarded to the woman student in the graduating class with the highest record in the following social sciences: economics, sociology, political science, and history; combined with general excellence.

John Henry Cowles Prizes.—These prizes, founded in 1943 by John H. Cowles, Grand Commander of the Supreme Council of the Thirty-third Degree (Mother Council of the World) of the Ancient and Accepted Scottish Rite of Freemasonry, Southern Jurisdiction of the United States of America, are awarded annually to the two best scholars in the senior class of the School of Government. The prizes are as follows: first prize, \$80; second prize, \$40.

DeWitt Clinton Croissant Prize.—This prize, established by the late Professor DeWitt Clinton Croissant, consists of \$45, which is awarded annually to the undergraduate student who as a member of one of the University courses in drama or as a participant in University dramatics submits to the English Department the best essay on drama or the theatre.

E. K. Cutter Prize.—The E. K. Cutter Prize in English was established by the late Marion Kendall Cutter "for excellence in the study of English." An annual prize of \$45 is awarded to the member of the graduating class whose record in English, combined with general excellence, shows most marked aptitude for and attainment in English studies.

Daughters of the American Revolution Prize.—This prize, established by the Daughters of the American Revolution of the District of Columbia, consists of \$15, which is awarded annually to the student who, having maintained a record of distinction in American history, submits the best essay upon a topic in the period of the American Revolution.

Isaac Davis Prizes.—These prizes, established by the Honorable Isaac Davis, of Massachusetts, in 1847, are awarded annually to such members of the senior class as shall have made the greatest progress in public speaking during their connection with the University. The prizes are as follows: first prize, \$20; second prize, \$15; third prize, \$10.

The award of these three prizes is determined by a public-speaking

contest in which the participants deliver original orations. Only members of the senior class who are candidates for the degree of Bachelor of Arts or Bachelor of Science are eligible to compete.

Delta Gamma Prize.—The District of Columbia Alumnae Chapter of Delta Gamma offers annually a prize of \$25, to the woman in the graduating class who has achieved the highest scholastic average in her four-year college course.

Delta Zeta Prize.—Delta Zeta Sorority offers annually a prize of \$10, to be awarded to the student maintaining the highest average in Zoology 1-2.

Ellsworth Prize.—The Ellsworth Prize of \$25, established by the late Mr. Fritz von Briesen, is awarded to the student doing the best work in the subject of Patent Law Practice.

Elton Prize.—The Elton Prize, established by the Reverend Romeo Elton, of Exeter, England, consists of \$15, awarded annually to the senior student having the highest average in the Greek language and literature.

Jesse Frederick Essary Prize in Journalism.—This memorial prize in the amount of \$100, established in 1948 by Helen Essary Murphy, is awarded annually to a student who has given promise of sound citizenship and ability in "forthright reporting" in student publication and/or under the jurisdiction of the Department of Journalism. The selection of the recipient will be made by a committee composed of the President of the University and two members of the faculty.

Joshua Evans III Prize in the Political and Social Sciences.—This memorial prize in the amount of \$50, "established by friends because of an outstanding life", is awarded annually to that man in the graduating class of The George Washington University "who has demonstrated his signal ability in the social and political sciences and who has given promise of the interpretation of that ability in good citizenship among his fellows". The selection of the recipient will be made by the President of the University and a committee from the Faculty of the Division of the Social Sciences.

Willie E. Fitch Prize.—The Willie E. Fitch Prize established in 1883 by James E. Fitch, Esq., in memory of his son, consists of \$50, which is awarded annually to a senior student for the best examination in chemistry.

Alice Douglas Goddard Prize.—This prize of \$60 was established in 1941 by Frederick Joseph Goddard of Georgetown, D.C., in memory of Alice Douglas Goddard, and is awarded annually to the upper division student making the highest average in American literature.

Edward Carrington Goddard Prize.—This prize, consisting of \$60, was established in 1923 by Mary Williamson Goddard, Alice Douglas

Goddard, and Frederick Joseph Goddard, of Georgetown, D.C., in memory of Edward Carrington Goddard, class of '81, and is awarded to the junior or senior student making the highest average in the French language and literature.

James Douglas Goddard Prize.—This prize, consisting of \$60, was established in 1923 by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown, D.C., in memory of James Douglas Goddard, class of '01, and is awarded to the senior student making the highest average in pharmacy.

Morgan Richardson Goddard Prize.—This prize, consisting of \$60, was established in 1923 by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown, D.C., in memory of Morgan Richardson Goddard, and is awarded to the junior or senior student making the highest average in the following fields: economics, business administration, foreign commerce, and public accounting.

Gardiner G. Hubbard Memorial Prize in United States History.—This prize of \$50 was established by Mrs. Gertrude M. Hubbard in memory of her husband, the late Gardiner G. Hubbard, and is awarded annually to that member of the graduating class majoring in history who has maintained the highest standing in courses in United States history.

Kappa Kappa Gamma Prize.—Kappa Kappa Gamma Sorority offers annually a prize of \$10 to the full-time freshman who achieves the best record in Botany 1 and 2.

John Bell Larner Prize.—This prize, established by the bequest of John Bell Larner, consists of a medal which is awarded annually to that member of the graduating class in the Law School who attains the highest average grade in the entire course for the degree of Bachelor of Laws.

Mortar Board Prize.—This prize, consisting of a silver cup, is awarded annually to the woman student in the sophomore class having a scholarship average of B or higher and the most outstanding record in activities.

Omicron Delta Kappa Prize.—Alpha Delta Circle of Omicron Delta Kappa Fraternity offers annually a plaque to be awarded to "that member of the senior class (of Columbian College) who throughout his course has done the most constructive work in the furtherance and upbuilding of the University student activities".

John Ordronaux Prizes.—These prizes were established in 1909 by the bequest of John Ordronaux.

The amount of \$100 is awarded to the member of the graduating class in the School of Medicine who has the highest scholastic standing.

The amount of \$50 is awarded annually to the student in the Law

School who has attained the highest average grade in the first year, full-time course; and \$50 to the student who has attained the highest average grade in the second-year, full-time course.

Phi Eta Sigma Prize.—The George Washington University Chapter of Phi Eta Sigma offers each year to the male student attaining the highest scholastic average in his first full term of work, a choice book selected from the field of the recipient's major interest. The winner's name will be engraved on a plaque in the Office of the Dean of the Junior College.

Phi Sigma Kappa Prize.—Phi Sigma Kappa Fraternity offers annually a silver cup to the winner of an oratorical contest, open to all freshmen.

Pi Beta Phi Prize.—A prize of \$20 is awarded annually by the District of Columbia Alpha Chapter of Pi Beta Phi Fraternity to that woman member of the senior class who throughout her college course has done the most constructive work in the promotion of student activities among the women of the University.

Ruggles Prize.—The Ruggles Prize, established by Professor William Ruggles in 1850, consists of \$25 awarded annually to a candidate for a baccalaureate degree for excellence in mathematics.

Sigma Kappa Prize.—Zeta Chapter of Sigma Kappa Sorority offers an annual prize of \$10 to the student with the highest grade in the final examination in General Chemistry.

Sigma Tau Prize.—Xi Chapter of Sigma Tau Fraternity offers annually a medal to be awarded to that member of the freshman class in the School of Engineering who maintains the highest scholastic standing in the work of the entire year.

Staughton Prize.—The Staughton Prize, established by the Reverend Romeo Elton, consists of \$15 awarded annually to the senior student making the best record in the Latin language and literature.

James MacBride Sterrett, Jr., Prize.—This prize, established in 1911 by Professor James MacBride Sterrett in memory of his son, consists of books awarded annually to that student who obtains the highest average in Physics 6, 7, and 8.

Charles Clinton Swisher Historical Club Prize.—This prize, established in 1936 by the Charles Clinton Swisher Historical Club and augmented in 1941 by the bequest of the late Professor Charles Clinton Swisher, is an annual prize of \$60 awarded to the student who submits the best essay covering some phase of medieval history.

Theta Tau Activities Plaque.—Gamma Beta Chapter of Theta Tau Fraternity offers annually a plaque to be awarded to that member of the senior class who has the most outstanding record in activities in the School of Engineering during the entire period of his attendance.

United Daughters of the Confederacy Prize.—This prize, established

in 1946 by the General Lewis A. Armistead Chapter, number 2136, United Daughters of the Confederacy, consists of \$25, which is awarded annually to the student showing the greatest proficiency in the history of the Southern States.

Thomas F. Walsh Prize.—This prize, established in 1901 by Thomas F. Walsh, consists of \$60 awarded annually to that student who submits the best essay in Irish history.

Alexander Wilbourne Weddell Prize.—From a fund established in 1923 by Mrs. Virginia Chase Weddell, an annual prize of \$250 is awarded to a candidate for a degree who writes the best essay on the subject of "the promotion of peace among the nations of the world". The prize essays shall become the property of the University and shall not be printed or published without the written consent of the University. The University reserves the right to withhold the award if no essay attaining the required degree of excellence is submitted.

FINANCIAL AID

INTERNSHIP

In memory of her mother, Anna Bartsch, Dr. Anna Bartsch-Dunne established in 1946 a fund to aid in the support of an internship. This aid, in the amount of \$15 a month, is awarded annually to a woman holding an internship in the University Hospital.

LOAN FUNDS

The following loan funds are available to students in the University in accordance with the qualifications placed thereon by the donors. Inquiries should be directed to the Office of the Comptroller.

University Loan Fund.—The Trustees of The George Washington University have established a loan fund amounting to \$10,000.

Daughters of the American Revolution Loan Fund.—The District of Columbia Chapters of the Daughters of the American Revolution have established an endowment fund of \$5,000, the income (\$2,865.41) of which is available for loans to descendants of patriots of the American Revolution.

Home Economics Loan Fund.—This fund in the amount of \$352.35, contributed by the D. C. Home Economics Association, is available for loans to senior girls majoring in Home Economics.

Kellogg Medical School Loan Fund.—The W. K. Kellogg Foundation in Battle Creek, Michigan, has established a fund in the amount of \$16,345.20 for loans to students in the School of Medicine.

Knights Templar Educational Loan Fund.—This fund, contributed and administered by the Grand Commandery of Knights Templar of

the District of Columbia, is available for loans to students, preferably in the upper classes, who are residents of the District of Columbia

Law Association Loan Fund.—The George Washington Law Association has established a loan fund in the amount of \$769.73 for loans to students in the Law School.

Henry Strong Educational Foundation.—The Henry Strong Educational Foundation, established at Chicago under the will of General Henry Strong, makes available a fund for loans to both men and women students under the age of twenty-five years.

Henry Strong—William A. Maury Loan Fund.—This fund, also allocated from the funds of the Henry Strong Educational Foundation, is to be loaned to students under the age of twenty-five years in the George Washington University Law School.

Sutherland Medical School Loan Fund.—This fund, in the amount of \$1,200 and established by Mrs. Rose L. Sutherland, is available for loans to students in the School of Medicine.

REGULATIONS

A student enrolled in the University is required to conform to the University regulations and to comply with the rules and regulations of the college, school, or division in which he is registered.

A student who withdraws or is suspended, or is otherwise absent from the University for one term or more, may re-enter and continue his work only under the rules and regulations in force at the time of his return.

If a student knowingly makes a false statement or conceals material information on an application for admission, registration card, or any other University document, his registration may be canceled and he will be ineligible (except by special action of the Faculty) for subsequent registration in any unit of the University.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required. A student may be dropped from any course for undue absence.

A student who has been suspended, either for delinquency in payment of fees or for any other reason, is not permitted to attend classes during the period of suspension.

For further regulations regarding attendance, consult the announcements of the several colleges and schools.

SCHOLARSHIP REQUIREMENTS

A student who fails to maintain the scholarship requirements of the college, school, or division in which he is registered may be dismissed from the University.

GRADES

Grades are not given out by instructors but are mailed to the student through the office of the Registrar at the close of each term. Upon request, a copy of the student's grades will be forwarded to his parent or guardian.

The following grading system is used: excellent, *A*; good, *B*; average, *C*; passing, *D*; failing, *F*. Whenever a grade has not been assigned, the symbol *Inc.* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded. The symbol *Inc.* is a sign temporarily to indicate that all the required work of the course has not been completed and a satisfactory explanation has been given to the instructor. An "incomplete" can not be made up after the lapse of one calendar year except by permission

of the Faculty. Courses from which a student has withdrawn by proper authorization will be indicated by the symbol *W*. No student may repeat for grade a course in which he has received a grade of *D* or above, unless required to do so by the department concerned.

For graduate work, grades are indicated as "satisfactory", "unsatisfactory", or "incomplete".

For the grading systems of the Law School and the School of Medicine, see the explanations in the announcements of those schools.

QUALITY-POINT INDEX

Quality points are computed from grades as follows: *A*, four points; *B*, three points; *C*, two points; *D*, one point; *F*, no points, for each credit hour for which the student has registered.

Scholarship is computed in terms of the quality-point index, obtained by dividing the number of quality points by the number of credit hours for which the student has registered, both based on the complete collegiate record. Courses marked *W* or *Inc.* are not considered in determining the index, except that courses marked *Inc.* will be considered when a formal grade is recorded, or at the close of a calendar year, whichever occurs first. If an "incomplete" is not superseded by a proper grade within the allotted time, it is computed as zero quality points. Grades in courses taken at another institution are not considered in computing the quality-point index.

EXAMINATIONS

Examinations are scheduled in all courses at the end of each term or at the completion of the course.

A student guilty of dishonesty in examinations is subject to the regulations of the faculty under which he is registered.

For further regulations regarding examinations, consult the announcements of the several colleges, schools, and divisions.

WITHDRAWAL

Withdrawal from a course or from the University, *without academic or financial penalty*, requires the permission of the dean of the college, school, or division in which the student is registered. Permission to withdraw from the University will not be granted a student who has not a clear financial record. (See "Fees and Financial Regulations", pages 21-23.)

Withdrawal between October 31 and the end of the fall term and between February 28 and the end of the winter term is permitted only in exceptional cases.

All charges for courses dropped without the approval of the dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

CHANGES IN PROGRAM OF STUDIES

A student may not change or drop (see "Withdrawals", above) courses or change his status to that of auditor except with the approval of the dean of the college, school, or division in which he is registered, upon presentation of adequate reasons for such changes.

Change from one section to another of the same course or from one major subject to another within the same college or school may be made with the approval of the dean. All requirements specified in the course of study to which the change is made must be satisfied before graduation.

Transfer from one college, school, or division to another may be made only with the approval of the deans concerned. Applications for such change should be made on the proper form, obtainable in the Office of the Director of Admissions, where it should be filed.

CREDIT

Credit toward a degree is given only after regular registration for and satisfactory completion of the required work of classes in the University, or upon the granting of advanced standing in accordance with the regulations of the several colleges, schools, and divisions.

On request the Registrar will issue to the student a balance sheet showing the amount of work completed and the amount necessary to complete the requirements for a degree.

In special instances, a person who has been admitted to the University may be registered, with the permission of the instructor, as an "auditor" in a class. An auditor is not required to take active part in the exercises or to pass examinations, but no credit will be allowed for such attendance.

TRANSCRIPTS OF RECORD

Official transcripts of student records will be forwarded on request to other institutions. Unofficial copies of records will be issued to the student on request. No charge is made for the first three transcripts; a fee of one dollar is charged for each one thereafter. No certificate of work done will be issued for a student who does not have a clear financial record.

SUMMER SCHOOL CREDIT

A student who plans to attend summer school sessions at another institution with the intention of having credits so obtained apply toward graduation from this University must first secure the written approval of

the dean of his college or school. In no event will such credits be recognized to an amount in excess of that which might be earned in a similar period in this institution.

PHYSICAL EDUCATION REQUIREMENTS

Students in the Junior College and freshmen and sophomores in the School of Engineering are required to take Physical Education 1-2 and 11-12 unless they are registered for less than 9 credit hours or unless regular employment during the day makes it necessary to take all classes during the evening hours.

Any other exemptions will be granted only upon written petition which has been recommended by the physical education department concerned and approved by the dean of the college or school in which the student is registered.

A student entering the University with advanced standing is not exempt from the physical education requirements unless he has satisfactorily met the requirements elsewhere. Courses in military training are not accepted in satisfaction of these requirements.

The required medical and physical examinations, as specified by the departments of physical education, will be arranged at the time of registration.

GRADUATION REQUIREMENTS

To be recommended for graduation a student must have met the admission requirements of the college or school in which he is registered, completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered, and be free from all indebtedness to the University.

Application for Graduation.—Application for a degree should be filed in the Office of the Registrar at the time of registration for the first term of the senior or final year and may not be filed later than the date specified in the University calendar.

Scholarship.—In all undergraduate divisions of the University the scholarship requirement for graduation is a quality-point index of at least 2.00.

The graduate student must meet the scholarship requirements for the particular degree for which he is registered.

Curriculum.—Curriculum requirements for each degree are stated under the college or school offering work in preparation for the degree.

Residence.—In all undergraduate divisions of the University (except the Junior college where fifteen credit hours are ordinarily required) a minimum of one year, or thirty credit hours, must be completed in residence. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless

special permission is granted by the dean of the college or school concerned to pursue work elsewhere, the work of the senior or final year must be completed in residence.

The graduate student must meet the residence requirements for the particular degree for which he is registered.

With the permission of the dean of the college, school, or division concerned, a student may be granted leave of absence; such student should, however, remain technically in residence by paying the residence fee for each term he is absent. For the purpose of this regulation, the summer sessions will not be considered a term.

Attendance and Conduct.—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

Thesis or Dissertation.—A thesis or dissertation submitted in partial satisfaction of requirements for the Master's degrees, the professional degrees in engineering, the degree of Doctor of Education, the degree of Doctor of Juridical Science, or the degree of Doctor of Philosophy must be presented in its final form to the dean of the college or school concerned not later than the date specified in the University calendar. Three* copies of each thesis or dissertation are required, one typewritten original and two legible and complete carbon copies. Detailed instructions for the styling of all theses and dissertations should be obtained from the appropriate dean.

Accepted theses or dissertations, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in the thesis or dissertation must be secured from the appropriate faculty.

Presence at Graduation.—A candidate is required to be present at the graduation exercises unless written application for graduation in absentia is approved by the dean of his college or school.

HONORS

With distinction.—In all undergraduate divisions of the University the degree may be conferred "with distinction", at the discretion of the Faculty, if a student attains a quality-point index of 3.50 or higher on all work taken at this institution except that taken during the term immediately preceding the granting of the degree. To be eligible for this honor a student must have completed at this institution at least one-half of the work required for the degree.

In the School of Medicine and the Law School, degrees may be conferred "with distinction", at the discretion of the Faculty, on those students who attain an average of *A* on all work taken for the degrees.

* In the School of Education, four copies.

Special honors.—Special honors may be awarded by the Faculty to any member of the graduating class for outstanding achievement in the student's major field of work on recommendation of the major department, under the following regulations:

1. The student must have his candidacy for special honors approved by the faculty member representing the major department or field not later than the beginning of the senior year.
2. The student must meet such other conditions as may be set at the time his candidacy is approved.
3. No student will be awarded special honors unless he has a quality-point index of at least 3.00 on all work taken at this institution except that taken during the term immediately preceding the granting of the degree.
4. To be eligible for honors a student must have completed at this institution at least one-half of the work required for the degree prior to the beginning of the term immediately preceding the granting of the degree.

THE LIBRARY

A student registered in the University is entitled to the reference use of the University Library. The University Membership Card, issued upon the payment of fees, must be presented as identification.

Library books, with the exception of those in the Law and Medical collections, may be drawn for home use for a period of two weeks. Any book which does circulate is subject to recall by the Librarian at any time. Reserve books and periodicals for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

HOURS

The University Library is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday.

The Law Library is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday, 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday.

The Medical Library is open from 9:00 A.M. to 9:00 P.M. each class day (Saturday, 9:00 A.M. to 1:00 P.M.).

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the

interest of the student or the University, the University Administration deems it advisable to do so.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

PROPERTY RESPONSIBILITY

The University is not responsible for the loss of personal property in any University building.

VETERANS EDUCATION

The Office of Veterans' Education of The George Washington University operates as a service bureau for veterans interested in studying at the University and acts in a liaison capacity between the University and the Veterans Administration. Here information will be given concerning the educational program of the University and the procedure for securing the educational benefits of the "GI Bill".

Veterans who are undecided concerning vocational plans will be referred to the Counseling Center for expert vocational guidance by experienced counselors and psychometrists.

Special bulletins on veterans educational opportunities at The George Washington University may be obtained from the Admissions Office.

AUTHORIZATION FROM THE VETERANS ADMINISTRATION

At least thirty days prior to registration the veteran should apply to the Regional Office of the Veterans Administration, 1825 H Street, NW., for a Certificate of Eligibility and Entitlement or, if entitled to vocational rehabilitation, a letter approving training under Public Law 16 for presentation to the Office of Veterans' Education at the time of registration. A photostatic copy of separation papers must accompany the original application for certification. Veterans who have attended another institution under the GI Bill must obtain a Supplemental Certificate of Eligibility to present to this University.

Veterans already enrolled in the University are requested to consult the Office of Veterans' Education prior to making any changes in academic program, because of changes in Veterans Administration regulations concerning Supplemental Certification.

ADMISSION

The entrance requirements for the Junior College, Columbian College, and the School of Government, in other than the pre-professional curricula, have been somewhat modified for veterans who are deficient in the regular requirements for admission, but who have been found by psychological and educational tests able to undertake college work. Veterans who have been enrolled in another educational institution since leaving the service, or who have been out of the service for more than one year prior to the beginning of the term for which they seek admission, must qualify under the regular admissions policies. (For admission requirements and procedure, see pages 11-19.)

Credit for work done in the service schools is granted by the Junior

College, Columbian College, the School of Engineering, and the School of Government provided the veteran has not been out of the service for three years or more. To be considered for such credit, veterans should submit to the Director of Admissions photostatic copies of their records indicating courses successfully completed with sufficient identification of the course to enable the Admissions Office to locate it in the Guide to Evaluation of Educational Experience in the Armed Forces.

CONTINUOUS REGISTRATION

By carrying a continuous program throughout the fall, winter, and summer terms, the veteran may complete a four-year college course in three calendar years with no interruption in his subsistence payments.

THE COLLEGES, SCHOOLS, AND DIVISIONS

THE JUNIOR COLLEGE

THE FACULTY AND STAFF OF INSTRUCTION •

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
 Myron Law Koenig, Ph.D., *Dean of the Junior College*
 William Lewis Turner, A.M., *Assistant Dean of the Junior College*
 Katharine Rogers Adams, Ph.D., *Assistant Dean in the Junior College*
 George Martin Koehl, A.M., *Assistant Dean in the Junior College*
 Carr Bartleson Lavell, A.M., *Assistant Dean in the Junior College*

Thomas Benjamin Brown, Ph.D., *Professor of Physics*
 Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*

Norris Ingersoll Crandall, M.Arch., *Professor of Art*
 ‡Edward Henry Sehart, Ph.D., *Professor of German*
 Walter Lynn Cheney, Ph.D., *Professor of Physics*
 Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*
 Donnell Brooks Young, Ph.D., *Professor of Zoology*
 Warren Reed West, Ph.D., *Professor of Political Science*
 Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women*
 Francis Edgar Johnston, Ph.D., *Professor of Mathematics*
 Benjamin Douglass Van Evera, Ph.D., *Professor of Chemistry*
 Merle Irving Protzman, Ph.D., *Professor of Romance Languages*
 Ralph Dale Kennedy, Ph.D., *Professor of Accounting*
 Florence Marie Mears, Ph.D., *Professor of Mathematics*
 Wood Gray, Ph.D., *Professor of American History*
 Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
 Ira Bowers Hansen, Ph.D., *Professor of Zoology*
 Arthur Edward Burns, Ph.D., *Professor of Economics*
 Paul William Bowman, Ph.D., *Professor of Biology*
 Lawson Edwin Yocum, Ph.D., *Professor of Botany*
 John Withrow Brewer, Ph.D., *Professor of International Law*
 Frances Kirkpatrick, A.M., *Professor of Home Economics*
 Louis Clark Keating, Ph.D., *Professor of Romance Languages*
 William Henry Myers, A.M., *Professor of Physical Education for Men*
 Harold Loran Geisert, Ph.D., *Professor of Sociology*
 Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
 Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*

• The President of the University, the Dean and Assistant Deans (Junior College), the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

‡ On sabbatical leave winter term 1950-51.

- Ernest Sewall Shepard, A.M., *Professor of English Literature*
 Charles Watson Bliven, M.S., *Professor of Pharmacy*
 Alan Thomas Deibert, A.M., *Professor of Romance Languages*
 *Donald Stevenson Watson, Ph.D., *Professor of Economics*
 Myron Law Koenig, Ph.D., *Professor of American History*
 Calvin Darlington Linton, Ph.D., *Professor of English Literature*
 Charles Edward Gauss, Mus.B., Ph.D., *Elton Professor of Philosophy*
 Elbridge Colby, Ph.D., *Professor of Journalism*
 Donald Chenoweth Kline, B.Arch., *Associate Professor of Art*
 John Francis Latimer, Ph.D., *Associate Professor of Classical Languages and Literatures*
 Helen Bennett Lawrence, A.M., *Associate Professor of Physical Education for Women*
 Irene Cornwell, Ph.D., *Associate Professor of French*
 Kathryn Mildred Towne, A.M., *Associate Professor of Home Economics*
 Antonio Alonso, A.M., *Associate Professor of Spanish*
 Charles William Cole, Ph.D., *Associate Professor of American Literature*
 Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*
 Wolfram Karl Legner, Ph.D., *Associate Professor of German*
 Joseph Henry Krupa, M.S., *Associate Professor of Physical Education for Men*
 Elizabeth Burtner, A.M., *Associate Professor of Physical Education for Women*
 George Martin Koehl, A.M., *Associate Professor of Physics*
 ‡Lubin Poe Leggette, A.M., *Associate Professor of Speech*
 Robert Dale Campbell, Ph.D., *Associate Professor of Geography*
 Lawrence Daniel Folkemer, Ph.D., *Associate Professor of Religion*
 Robert Randal Meijer, Ph.D., *Associate Professor of Physics*
 Robert Corbin Vincent, Ph.D., *Associate Professor of Chemistry*
 William Lewis Turner, A.M., *Associate Professor of English*
 Averett Howard, A.M., *Associate Professor of English Composition*
 Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 Roderic Hollett Davison, Ph.D., *Associate Professor of European History*
 George Francis Henigan, Jr., Ph.M., *Associate Professor of Speech*
 Robert Hamilton Moore, Ph.D., *Associate Professor of English Composition*
 Edith Elizabeth Mortensen, Ph.D., *Associate Professor of Zoology*
 Dorothy Helene Veon, A.M., Ed.D., *Assistant Professor of Secretarial Studies*
 Reuben Esselstyn Wood, Ph.D., *Assistant Professor of Chemistry*

* On sabbatical leave winter term 1950-51.

‡ On leave of absence 1950-51.

- Raymond George Hanken, B.S. in P.E., *Assistant Professor of Physical Education for Men*
- Muriel Hope McClanahan, Ph.D., *Assistant Professor of English*
- Nels David Nelson, Ph.D., *Assistant Professor of Mathematics*
- *Calvin Weir Pettit, Ph.M., *Assistant Professor of Speech*
- Carey DeWitt Eldridge, Ph.D., *Assistant Professor of Romance Languages*
- Sam Clark Munson, M.S., *Assistant Professor of Biology*
- Paul Edward Hanchett, Ph.D., *Assistant Professor of Economics*
- Edwin Lockwood Stevens, A.M., *Assistant Professor of Speech*
- Martin Steele Day, Ph.D., *Assistant Professor of English*
- James Harold Coberly, Ph.D., *Assistant Professor of American Literature*
- Willard Edmund Caldwell, Ph.D., *Assistant Professor of Psychology*
- Carr Bartleson Lavell, A.M., *Assistant Professor of Sociology*
- Phyllis Annette Nichols, A.M., *Assistant Professor of English*
- Vera Lillian Mowry, Ph.D., *Assistant Professor of English*
- *John Palmer Reesing, Jr., A.M., *Assistant Professor of English*
- John Walter Beardslee III, A.B., B.D., *Assistant Professor of Religion*
- William Franklin Jewell III, M.S., *Assistant Professor of Geography*
- Daniel Remsen Norton, Ph.D., *Assistant Professor of Chemistry*
- William Frederick Sager, Ph.D., *Assistant Professor of Chemistry*
- Ronald Bettes Thompson, A.B., *Assistant Professor of European History*
- Rafael Supervia, Doctor en Derecho, *Assistant Professor of Spanish*
- James Willard Harkness, B.S., Ed.M., *Assistant Professor of Chemistry*
- John Gage Allee, Jr., A.M., *Assistant Professor of English*
- Bernard Hayman Fox, Ph.D., *Assistant Professor of Psychology*
- Gilbert Pierce Haight, Jr., Ph.D., *Assistant Professor of Chemistry*
- Richard Catlin Haskett, A.M., *Assistant Professor of American History*
- Kennett William Yeager, Ph.D., *Assistant Professor of Sociology*
- Jacqueline Chevallaz Buhrman, A.M., *Assistant Professor of French*
- John Edward Cantlon, B.S., *Assistant Professor of Botany*
- Norman Patterson Crawford, A.M., *Assistant Professor of Speech*
- James Willis Robb, A.B., *Assistant Professor of Romance Languages*
- Earl Larkin Williams, A.M., *Lecturer in Mathematics*
- Alice Sylvia Venezky, Ph.D., *Instructor in English Composition*
- Ruth Elsie Jones, A.M., *Instructor in English Composition*
- Theodore Peter Perros, M.S., *Instructor in Chemistry*
- Edith Shores Surrey, A.M., *Instructor in Speech*
- Arthur Castner Christman, Jr., M.S., *Instructor in Physics*
- Jean McQuiston Coover, A.M., *Instructor in Physics*
- Charles Lawrence Marks, A.M., *Instructor in Statistics*

* On leave of absence 1950-51.

Jonathan Dayton Stoddart, A.M., *Instructor in Political Science*
 *William Adriance Withington, A.M., *Instructor in Geography*
 Lee Sheward Bielski, A.M., *Instructor in Speech*
 Mary Carman Rose, Ph.D., *Instructor in Philosophy*
 Edith Louise Williams, A.M., *Instructor in English Composition*
 Otho Thompson Beall, Jr., A.M., *Instructor in English Composition*
 John Leiper Freeman, Jr., A.M., *Instructor in Political Science*
 Henry Charles Krebs, A.B., *Instructor in Speech*
 Frederick Charles Kurtz, M.B.A., *Instructor in Accounting*
 Francis Lincoln Lambert, B.S., *Instructor in Zoology*
 William Vorenberg, A.M., *Instructor in Speech*
 William Heckert, A.B., *Instructor in Physics*
 Wilson Emerson Schmidt, A.M., *Instructor in Economics*

COMMITTEES ‡

THE DEAN'S COUNCIL §

1951

Charles Edward Gauss
 George Martin Koehl

1952

Wolfram Karl Legner
 Robert Corbin Vincent

1953

Howard Maxwell Merriman
 Elbridge Colby

COMMITTEE ON ADMISSION AND ADVANCED STANDING

William Lewis Turner, *Chairman*George Martin Koehl, *Vice-Chairman*

Alan Thomas Deibert
 Richard Catlin Haskett

Robert Hamilton Moore
 Sam Clark Munson

COMMITTEE ON SCHOLARSHIP

Katharine Rogers Adams, *Chairman*Carr Bartleson Lavell, *Vice-Chairman*

Kathryn Mildred Towne
 Robert Randal Meijer

Wolfram Karl Legner
 George Francis Henigan

* On leave of absence 1950-51.

‡ The President of the University and the Dean of the Junior College are members *ex officio* of all committees.

§ Elected by the Faculty.

JUNIOR COLLEGE ADVISORY COMMITTEE

Dean of the Junior College, *Chairman*

Assistant Dean of the Junior College, *Vice-Chairman*

Samuel Nathaniel Wrenn

George Martin Koehl

Carr Bartleson Lavell

Katharine Rogers Adams

GENERAL INFORMATION

INTRODUCTORY

The Junior College, which comprises the first two years of the standard four-year college program in the liberal arts and sciences, was established in 1930 as a part of the academic reorganization of the University. Prior to 1930, the four-year program had been administered by Columbian College since its organization in 1821.

The Junior College curricula continue the studies of a general cultural nature begun in the secondary schools, and lay a foundation for the more specialized work which is to follow. Emphasis is accordingly laid (1) upon the social, cultural, biological, and physical background of civilization (history, political science, physical and biological sciences, literature, etc.) and (2) upon the discipline necessary to the effective prosecution of more advanced work (English rhetoric and composition, foreign languages, mathematics, etc.).

The Junior College also provides the pre-professional work required for admission to the schools of Pharmacy, Education, and Government, and the first two years of the pre-professional work required by the schools of Medicine and Law.

In addition it provides two-year curricula in vocational training, leading to the degree of Associate in Arts.

ADVISORY SYSTEM

In order that students may have opportunities for assistance in planning their courses and also for obtaining personal, educational, and vocational advice in every phase of their academic work during the first two years, a number of members of the Faculty serve as advisers to Junior College students.

Members of the Faculty, selected for their knowledge of Junior College requirements and student programs, advise students in making up their programs of study for each term. A separate staff of experienced advisers under the chairmanship of the Dean assists those students who find it difficult to make adjustments to college life because of scholastic or other reasons. Students who are "warned" or who are on probation may be required to consult these advisers at regular intervals. Students

are encouraged to consult any member of the Advisory Staff or their instructors about college problems at any time.

Copies of notices of "warning" or probation will be sent to the parents or guardians of students on request, and the Dean and members of the Advisory Staff are available for consultation with parents or guardians concerning student problems.

REGULATIONS

Students in the Junior College are subject to, and are expected to familiarize themselves with, the regulations regarding ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 11-23, and the University regulations stated on pages 36-42.

SCHOLASTIC-APTITUDE TESTS

Students admitted to the Junior College may be required to take the scholastic-aptitude tests of the University.

REQUIRED PLACEMENT EXAMINATIONS

English.—Special placement examinations, required of all entering freshmen, will be conducted by the English Department. Students registered in English 1 are tested in the minimum essentials of standard usage, vocabulary, writing skill, and reading speed and comprehension. Those students who show marked superiority may be exempted from one or both terms of the course; those who are inadequately prepared for the course will be assigned to English A.

Romance Languages.—A standardized placement examination will be required of all entering students who wish to continue in college the language begun in high school. Upon completion of the examination assignment will be made to the appropriate course with credit to be assigned on the usual basis. This does not apply to students whose previous experience in a given language is equivalent to two college years.

The Use of Correct English.—The use of correct English, oral or written, is required not only in English but also in all other courses (see page 73).

FIRST- AND SECOND-GROUP COURSES

A Junior College student may not take second-group courses (courses numbered 101-200) without the written permission of the instructor and of the Dean of the Junior College. A student will not be permitted to postpone a first-group course, required under the curriculum for which he is registered, in order to take a second-group course for elective credit. The principle that first-group courses must be taken in the Junior College years, and advanced courses in Columbian College and the professional schools, will be rigidly adhered to in approving student programs. No

student on probation is permitted to take second-group courses except by the express permission of the Committee on Scholarship.

AMOUNT OF WORK

Fifteen or sixteen credit hours, not including required physical education, constitute normal work. A student not on probation may be permitted by the Dean to take seventeen credit hours.

A student having a quality-point index of 3.50 may, with the permission of the Dean, take eighteen or nineteen credit hours. No student may take more than nineteen credit hours, except with the permission of the Committee on Scholarship.

For an employed student working more than twenty-four hours a week, nine credit hours, not including required physical education, constitute normal work. An employed student not on probation may be permitted by the Dean to take ten credit hours. An employed student having a quality-point index of 3.50 may be permitted by the Dean to take twelve or thirteen credit hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a term is required to report that fact immediately to the Dean, to bring his program within the limitations set by the Faculty for the amount of work to be carried by an employed student.

ATTENDANCE

The student is held responsible to the instructor in charge of the course for which he is registered for all the work of the course, and all absences must be excused before provision will be made for him to make up the work missed.

With the exceptions noted below, occasional absences, not to exceed in number for each term the credit hours for the term, will be automatically excused. (If a course has distinct divisions such as lectures, laboratories, recitations, etc., these excuses apply pro rata to such separate divisions.) In the application of this rule absences immediately preceding or following holiday periods are to be counted double.

Such automatic excuses are intended to cover the occasional minor exigencies and not to constitute an indiscriminate privilege. A student on probation is allowed no automatic excuses.

Excuses for absences from two or more consecutive class periods, and for absences from examinations which have been announced in advance, can be obtained only by making written application to the instructor in charge of the course.

A student whose absences from any class, whether excused or unexcused, are in excess of one-fourth of the total number of class periods will

receive the grade of *F* for the course, except by special ruling of the Dean on recommendation of the instructor in the course.

CLASSIFICATION OF STUDENTS

A student who has satisfactorily completed at least thirty-two credit hours of work, including eighteen credit hours in his curriculum requirements, is classed as a *sophomore*.

THE DEGREE OF ASSOCIATE IN ARTS

Upon the satisfactory completion of the requirements of the Junior College, the degree of Associate in Arts is conferred.

REQUIREMENTS FOR THE DEGREE

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 36 and 37.

In order to receive the degree of Associate in Arts a student must have a quality-point index of at least 2.00.

Honor Roll.—The name of every student who has a quality-point index of 3.50 or higher will be placed on the honor roll and published. No consideration is given to those who have completed a total of less than fifteen credit hours. A place on the honor roll does not necessarily mean that the student will receive honors upon graduation.

Probation.—A student must maintain a quality-point index of at least 2.00 or be placed on probation.

A student remains on probation as long as his quality-point index is below 2.00; however, the student who has a quality-point index between 1.50 and 2.00 will be considered by the Committee on Scholarship, which may retain him on probation or suspend him.

Suspension.—A student who has a quality-point index below 1.50 will be suspended; however, a student who has a quality-point index between 1.40 and 1.50 will be considered by the Committee on Scholarship, which may retain him on probation or suspend him.

A student who is subject to probation for the third time, whether successive or after an interval, will be suspended.

For the purpose of these rules, the work taken in the summer sessions is considered one term.

A student suspended for poor scholarship may apply for readmission after an interval of two terms. On application for readmission the student must submit specific evidence to the Committee on Scholarship that he is better qualified to pursue college work. A student suspended twice for poor scholarship will not be readmitted.

The foregoing scholarship rules are applied when a student has undertaken a minimum of twelve hours. Thereafter, the rules are applied in multiples of nine hours.

Warnings.—At stated intervals during the academic year instructors file in the Office of the Junior College the names of those students who are doing work of *D* grade or lower. A "warning" will then be sent to the student and a copy of the warning filed with the appropriate adviser. A "warning" constitutes notice to the student that he must consult his instructor and adviser at the earliest opportunity. "Warning periods" are established between the 7th and 8th weeks of the fall and winter terms.

CURRICULUM REQUIREMENTS

The satisfactory completion of sixty credit hours of college work, exclusive of physical education, is required as outlined in one of the Junior College curricula described below.

Except for students registered for the combined degrees of Bachelor of Arts and Doctor of Medicine, not more than twelve credit hours of professional courses may be included in the one hundred and twenty credit hours required for the Bachelor's degrees in Columbian College. Junior College students electing professional courses under this rule must obtain the approval of the Dean of the Junior College.

Physical Education Requirements.—Physical education is required of all students in the freshman and sophomore years. (See "Physical Education Requirements", page 39.)

Foreign-Language Requirements.—For the degree of Associate in Arts a student must have completed satisfactorily the equivalent of two years of college work in a single foreign language except in the pre-pharmacy and pre-physical education curricula. (See "Placement Examinations", page 52.)

A student offering for admission four acceptable high school units of a single foreign language, or the equivalent, is not required to take any foreign language. If he offers three units, he must complete the second term of the second-year college course in the same language. If he offers two units, he must complete the entire second-year college course in the same language. If he offers one unit, he must complete the second term of the first-year college course and the entire second-year course in the same language.

In some instances foreign languages are required or recommended as a preparation for advanced work in Columbian College and the professional schools. The student should consult his adviser as to these requirements, so that appropriate foreign languages may be included, when necessary, in his Junior College program.

Curricula for Admission to Columbian College and the Professional Schools

Each of the following curricula comprises the first two years of a standard four-year college course and prepares the student for upper division work. Requirements for graduation from the Junior College may not be the same as the requirements for admission to Columbian College or a professional school. Therefore, the student should consult the specific admission requirements of the college or school for which he is preparing.

The first sixty credit hours of the ninety required for admission to the School of Medicine are undertaken in the Junior College. Each premedical program must be approved by the premedical adviser. For specific requirements, see "Admissions", page 15.

COLUMBIAN COLLEGE:

1. ARTS AND LETTERS*

The following two-year curriculum prepares for the Bachelor of Arts program in Columbian College:

	Credit Hours
English	English 1-2
	English 51-52, 71-72, 91-92, Art 11-12, 71-72, Classical Languages 71-72, or Philosophy 51-52
Foreign Language ...	See page 55 for foreign language requirement..
Social Studies	Economics 1-2, History 39-40 or 71-72, Political Science 9-10, or Sociology 1-2.....
Science	Biology 1-2, Botany 1-2, Chemistry 3-4, 11-12, Physics 5, 7 (6, 7) (5, 6), or Zoology 1-2...6 or 8
Physical Education ..	See page 39 for statement of requirement.
Elective†	22 to 24
Total.....	60 or 62

2. SCIENCE*

The following two-year curriculum prepares for the Bachelor of Science curriculum in Columbian College:

	Credit Hours
English	English 1-2
	English 51-52, 71-72, 91-92, Art 11-12, 71-72, Classical Languages 71-72, or Philosophy 51-52 (Elective if 6 hours of Social Studies are taken—see below)
	6

* Students who have had high school courses in chemistry, mathematics, and physics should consult the description of the beginning courses in these fields. For the degree of Bachelor of Science, the student should obtain the advice of the major departments as to proper prerequisite and collateral courses for the intended major.

† Credit is not given for courses elected in Physical Education or Secretarial Studies.

	Credit Hours
Foreign Language ... French or German or non-science elective.....	12
NOTE.—A reading knowledge of French or German is required. This may be satisfied by French 4 or German 4 or by special examination.	
Mathematics Mathematics 3, 6 or electives.....	6
NOTE.—The Mathematics 3 requirement may be satisfied by offering two years of high school algebra acceptable for admission; the Mathematics 6 requirement may be satisfied by offering one-half year of high school trigonometry acceptable for admission.	
Social Studies Economics 1-2, History 39-40, 71-72, Political Science 9-10, or Sociology 1-2 (Elective if 6 hours in the English, Art, Classical Languages, Philosophy group are taken—see above)	6
Science (a) Biology 1-2, Botany 1-2, Zoology 1-2 (b) Chemistry 11-12, Physics 5, 7 (6, 7) (5, 6)	18 to 22
(In satisfying this requirement, at least one year-course must be taken in both groups (a) and (b).)	
Physical Education .. See page 39 for statement of requirement.	
Elective*.....	2 to 12
Total.....	60 to 64

SCHOOL OF PHARMACY:

The following two-year curriculum prepares for the Bachelor of Science in Pharmacy curriculum in the School of Pharmacy:

	Credit Hours
English English 1-2	6
Science Botany 1 or 2, Chemistry 11-12, Physics 5, Zoology 1 (Freshman year).....	18
	Chemistry 21, 22, Physics 6 (Sophomore year) .. 11
Social Studies Economics 1	3
Professional courses .. Pharmacy 2 (Freshman year).....	1
	Pharmacy 21, 22, 23, 24, 25 (Sophomore year) .. 17
Elective	12
Physical Education .. See page 39 for statement of requirement.	
Total.....	68

SCHOOL OF EDUCATION:

I. EDUCATION

The following two-year curriculum prepares for the Bachelor of Arts in Education curriculum in the School of Education:

* Credit is not given for courses elected in Physical Education or Secretarial Studies.

	Credit Hours
English	English 1-2 6
	English 51-52, 71-72, or 91-92..... 6
Foreign Language ...	(French, German, Latin, or Spanish). See page 55 for foreign language requirement..... 12
Social Studies	History 71-72 6
	Economics 1-2; Geography 121-22; History 39-40; Political Science 9-10; or Sociology 1-2. (Those offering for admission two or more acceptable senior high school units in the Social Studies may be exempted from this requirement) 6
Science and Mathematics.....	Two terms to supplement senior high school courses, selected from: Biology 1-2; Botany 1-2; Chemistry 3-4, 11-12; Physics 5 and 6 or 7; Zoology 1-2; or Mathematics 3 and 6 or 6 and 12..... 6 or 8
Other Courses	Psychology 1 and 22..... 6
	Speech 1 or 11..... 3
	Statistics 53 3
Physical Education ..	See page 39 for statement of requirement.
Elective	4 to 6
Total.....	60

2. HOME ECONOMICS

The following two-year curriculum prepares for the Bachelor of Science in Home Economics curriculum in the School of Education:

	Credit Hours
English	English 1-2 6
	English 51-52, 71-72; Speech 1, 2 (1, 11)..... 6
Foreign Language ...	(French, German, Latin, or Spanish). See page 55 for foreign language requirement..... 12
Social Studies*	Economics, History, Political Science, or Sociology 6
Science	Chemistry 3-4, 11-12 (Sophomore year)..... 8
Psychology	Psychology 1 3
Physical Education ..	See page 39 for statement of requirement.
Curriculum Electives.	Home Economics 1, 22 (Freshman year)..... 6
	Home Economics 51, 62 (Sophomore year).... 6
Academic Electives..	(Freshman year) 3
	(Sophomore year) 4
Total.....	60

* Courses selected with the recommendation of the adviser in the Department of Home Economics.

3. PHYSICAL EDUCATION FOR MEN

The following two-year curriculum prepares for the Bachelor of Science in Physical Education curriculum in the School of Education:

	Credit Hours
English English 1-2	6
Social Studies History 39-40, 71-72, Political Science 9-10, or Sociology 1-2 (Freshman year).....	6
..... Economics, History, or Political Science (Soph- omore year)	6
Science Biology 1-2 or Zoology 1-2 (Freshman year) ..	6 or 8
Physical Education .. See page 39 for statement of requirement.	
Curriculum Electives. Physical Education 43-44, 47; Speech 1 or 11 (Freshman year)	9
..... Physical Education 45-46, 49, 50, 58; Psychology 1, 22 (Sophomore year).....	18
Elective	9
Total.....	60 or 62

4. PHYSICAL EDUCATION FOR WOMEN

The following two-year curriculum prepares for the Bachelor of Science in Physical Education curriculum in the School of Education:

	Credit Hours
English English 1-2	6
..... English 51-52, 71-72, or 91-92.....	6
Social Studies History 39-40, 71-72; Political Science 9-10; or Sociology 1-2	6
Science Biology 1-2 or Zoology 1-2.....	6 or 8
Physical Education .. See page 39 for statement of requirement.	
Curriculum Electives. Physical Education 43-44 (Freshman year)....	4
..... Physical Education 45-46, 49, 50; Psychology 1, 22 (Sophomore year)	16
Academic Electives.. (Each year)	6 or 8
Total.....	60 or 62

SCHOOL OF GOVERNMENT:

1. ACCOUNTING AND BUSINESS ADMINISTRATION

The following two-year curriculum prepares for the Bachelor of Arts in Government curricula in Accounting and in Business Administration in the School of Government:

	Credit Hours
Accounting Accounting 1-2	6
English English 1-2	6
Foreign Language ... See page 55 for foreign language requirement..	12
Social Studies Economics 1-2	6
History 71-72 or Political Science 9-10.....	6
Speech 1	3
Statistics Statistics 51, 52	6
Physical Education .. See page 39 for statement of requirement.	
Elective (Students interested in Foreign Commerce in- clude Geography 51)	15
Total.....	60

2. FOREIGN AFFAIRS

The following two-year curriculum prepares for the Bachelor of Arts in Government curriculum in Foreign Affairs in the School of Government:

	Credit Hours
English English 1-2	6
Foreign Language ... See page 55 for foreign language requirement..	12
Social Studies Economics 1-2, History 39-40, 71-72; Political Science 9-10	24
Mathematics, Science, Biology, Botany, Chemistry, Mathematics, Phys- ics, Statistics, or Zoology.....	6 or 8
Physical Education .. See page 39 for statement of requirement.	
Elective (To satisfy minimum required credits, Students interested in Foreign Service include Geog- raphy 51.)	
Total.....	60 or 62

3. STATISTICS

The following two-year curriculum prepares for the Bachelor of Arts in Government curriculum in Statistics in the School of Government:

	Credit Hours
English English 1-2	6
Foreign Language ... See page 55 for foreign language requirement..	12
Social Studies Economics 1-2, Philosophy 51-52.....	12
Mathematics Mathematics 20 and prerequisites.....	3 to 12
Physical Education .. See page 39 for statement of requirement.	
Elective	18 to 27
Total.....	50

VOCATIONAL CURRICULA

In addition to the above curricula, all of which prepare for admission to upper division colleges and schools, the Junior College offers the following two-year terminal courses.

1. SECRETARIAL STUDIES

		Credit Hours
English	English 1-2	6
	English 51-52, 71-72, or 91-92.....	6
	Secretarial Studies 51	3
Social Studies	Economics 1-2	6
General	Speech 11	3
	Business Administration 51.....	3
Secretarial Skills* ..	Secretarial Studies 1, 2, 11, 12, 15, 16, and 54..	21
Physical Education ..	See page 39 for statement of requirement.	
Elective	(To be selected with approval of adviser).....	12
Total.....		60

2. ACCOUNTING

The required work may be completed in two years on a full-time basis or in three years on a part-time basis, with the approval of the adviser.

REQUIRED COURSES	Credit Hours
Accounting 1-2	6
Accounting 102	3
Accounting 111	3
Accounting 137	3
Accounting 147	3
Accounting 151-52	6
Accounting 153	3
Accounting 161	3
Business Administration 102	3
Business Administration 131	3
Economics 1-2	6
English 1-2	6
Political Science 127	3
Political Science 128	3
Physical Education	
See page 39 for statement of requirement.	
Elective	6
(To be selected with the approval of the adviser.)	
Total	60

* Qualified students, upon the approval of the adviser or the satisfactory completion of a placement test, may waive Secretarial Studies 1, 11, and 12. Other courses, approved by the adviser, will be substituted.

Examinations for Waiving Curriculum Requirements *

A Student desiring to omit a required course may take such examination as the department prescribes, and, on passing satisfactorily, he may be relieved of the curriculum requirements in that subject and may qualify for registration in an advanced course. Passing this examination does not entitle the student to any hours of credit toward the degree. A student desiring to take such examinations should make written request of the Dean and pay the required fee at the Office of the Comptroller before the date of the examination specified in the University calendar.

Honors

The degree of Associate in Arts may be conferred "with distinction" upon the student who has a quality-point index of 3.50 or higher, provided that student has been in residence at the University for 30 hours, 15 of which must have been taken in the Junior College at the time the index is calculated.

* This provision does not apply to the premedical student, all of whose required premedical work must be taken in a recognized college of arts and sciences.

COLUMBIAN COLLEGE

THE FACULTY AND STAFF OF INSTRUCTION •

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Henry Grattan Doyle, A.M., LL.D., Litt.D., *Dean of Columbia College*
Calvin Darlington Linton, Ph.D., *Assistant Dean of Columbia College*

Thomas Benjamin Brown, Ph.D., *Professor of Physics*
Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*
Joseph Hiram Roe, Ph.D., *Professor of Biochemistry*
Norris Ingersoll Crandall, M.Arch., *Professor of Art*
†Edward Henry Sehart, Ph.D., *Professor of German*
Robert Whitney Bolwell, Ph.D., *Professor of American Literature*
Walter Lynn Cheney, Ph.D., *Professor of Physics*
James Henry Taylor, Ph.D., *Professor of Mathematics*
Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*
Errett Cyril Albritton, A.B., M.D., *Professor of Physiology*
Donnell Brooks Young, Ph.D., *Professor of Zoology*
George Antony Gamow, Ph.D., *Professor of Theoretical Physics*
Warren Reed West, Ph.D., *Professor of Political Science*
‡Frank Mark Weida, Ph.D., *Professor of Statistics*
Francis Edgar Johnston, Ph.D., *Professor of Mathematics*
Leland Wilbur Parr, Ph.D., *Professor of Bacteriology*
Benjamin Douglass Van Evera, Ph.D., *Professor of Chemistry*
Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
Merle Irving Protzman, Ph.D., *Professor of Romance Languages*
Alva Curtis Wilgus, Ph.D., *Professor of Latin American History*
Florence Marie Mears, Ph.D., *Professor of Mathematics*
Wood Gray, Ph.D., *Professor of American History*
Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
Ira Bowers Hansen, Ph.D., *Professor of Zoology*
Arthur Edward Burns, Ph.D., *Professor of Economics*
John Albert Tillema, Ph.D., LL.M., S.J.D., *Professor of Political Science*
Paul William Bowman, Ph.D., *Professor of Biology*
Lawson Edwin Yocum, Ph.D., *Professor of Botany*
John Withrow Brewer, Ph.D., *Professor of International Law*

* The President of the University, the Dean and the Assistant Dean of the College, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, and Assistant Professors constitute the Faculty.

† On sabbatical leave winter term 1950-51.

Louis Clark Keating, Ph.D., *Professor of Romance Languages*
 Harold Loran Geisert, Ph.D., *Professor of Sociology*
 Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
 Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*
 Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*

Ernest Sewall Shepard, A.M., *Professor of English Literature*
 *George Winchester Stone, Jr., Ph.D., *Professor of English Literature*
 Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
 Warren Andrew, Ph.D., M.D., *Professor of Anatomy*
 Alan Thomas Deibert, A.M., *Professor of Romance Languages*
 Chester Elwood Leese, Ph.D., *Professor of Physiology*
 ‡Donald Stevenson Watson, Ph.D., *Professor of Economics*
 Myron Law Koenig, Ph.D., *Professor of American History*
 Calvin Darlington Linton, Ph.D., *Professor of English Literature*
 Charles Edward Gauss, Mus.B., Ph.D., *Elton Professor of Philosophy*
 Elbridge Colby, Ph.D., *Professor of Journalism*
 James Christopher Corliss, A.M., *Adjunct Professor of Inter-American Economics*

Edward Campion Acheson, Ph.D., *Associate Professor of Finance*
 Donald Chenoweth Kline, B.Arch., *Associate Professor of Art*
 John Francis Latimer, Ph.D., *Associate Professor of Classical Languages and Literatures*
 Irene Cornwell, Ph.D., *Associate Professor of French*
 Antonio Alonso, A.M., *Associate Professor of Spanish*
 Charles William Cole, Ph.D., *Associate Professor of American Literature*
 Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*
 Wolfram Karl Legner, Ph.D., *Associate Professor of German*
 George Martin Koehl, A.M., *Associate Professor of Physics*
 §Lubin Poe Leggette, A.M., *Associate Professor of Speech*
 Robert Dale Campbell, Ph.D., *Associate Professor of Geography*
 Lawrence Daniel Folkemer, Ph.D., *Associate Professor of Religion*
 Robert Randal Meijer, Ph.D., *Associate Professor of Physics*
 Robert Corbin Vincent, Ph.D., *Associate Professor of Chemistry*
 Wolfgang Herbert Kraus, Dr.Jur., S.J.D., *Associate Professor of Political Science*
 Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 Roderic Hollett Davison, Ph.D., *Associate Professor of European History*
 George Francis Henigan, Jr., Ph.M., *Associate Professor of Speech*
 Robert Hamilton Moore, Ph.D., *Associate Professor of English Composition*

* On sabbatical leave 1950-51.

‡ On sabbatical leave winter term 1950-51.

§ On leave of absence 1950-51.

- Edith Elizabeth Mortensen, Ph.D., *Associate Professor of Zoology*
 Reuben Esselstyn Wood, Ph.D., *Assistant Professor of Chemistry*
 Nels David Nelson, Ph.D., *Assistant Professor of Mathematics*
 *Calvin Weir Pettit, Ph.M., *Assistant Professor of Speech*
 Sam Clark Munson, M.S., *Assistant Professor of Biology*
 Edwin Lockwood Stevens, A.M., *Assistant Professor of Speech*
 Martin Steele Day, Ph.D., *Assistant Professor of English*
 James Harold Coberly, Ph.D., *Assistant Professor of American Literature*
 Willard Edmund Caldwell, Ph.D., *Assistant Professor of Psychology*
 Edward Perkins Mangum, A.M., *Assistant Professor of Speech*
 John Walter Beardslee III, A.B., B.D., *Assistant Professor of Religion*
 William Franklin Jewell III, M.S., *Assistant Professor of Geography*
 William Frederick Sager, Ph.D., *Assistant Professor of Chemistry*
 Ronald Bettes Thompson, A.B., *Assistant Professor of European History*
 Rafael Supervia, Doctor en Derecho, *Assistant Professor of Spanish*
 John Gage Allee, Jr., A.M., *Assistant Professor of English*
 Bernard Hayman Fox, Ph.D., *Assistant Professor of Psychology*
 Richard Catlin Haskett, Ph.D., *Assistant Professor of American History*
 Kennett William Yeager, Ph.D., *Assistant Professor of Sociology*
 John Edward Cantlon, B.S., *Assistant Professor of Botany*
 Norman Patterson Crawford, A.M., *Assistant Professor of Speech*
 Walter Hall Bailey, A.M., *Assistant Professor of Geography*
 Alberto Vázquez, Ph.D., *Lecturer on Spanish American Literature*

COMMITTEES ‡

THE DEAN'S COUNCIL §

1951

Gretchen Louisa Rogers
 Reuben Esselstyn Wood

1952

Merle Irving Protzman
 James Harold Coberly

1953

George Martin Koehl
 Martin Steele Day

COMMITTEE ON ADMISSION AND ADVANCED STANDING

Calvin Darlington Linton, *Chairman*
 Edith Elizabeth Mortensen, *Secretary*

Alan Thomas Deibert

Charles William Cole

Robert Randal Meijer

* On leave of absence 1950-51.
 ‡ The President of the University and the Dean of Columbian College are members ex officio of all committees.
 § Elected by the Faculty.

COMMITTEE ON THE USE OF CORRECT ENGLISH

Averett Howard, *Chairman*Edith Elizabeth Mortensen
Muriel Hope McClanahanGeorge Francis Henigan, Jr.
Martin Steele Day

COMMITTEE ON SCHOLARSHIP

Fred Salisbury Tupper, *Chairman*Florence Marie Mears
Howard Maxwell MerrimanSamuel Nathaniel Wrenn
Antonio Alonso

COMMITTEE ON STUDIES

The Dean of the College, *Chairman*Fred Salisbury Tupper
(*Languages and Literatures*)
Frank Mark Weida
(*Mathematics and Physical
Sciences*)Thelma Hunt
(*Natural Sciences*)
Wood Gray
(*Social Sciences*)

DIVISIONAL ORGANIZATIONS

LANGUAGES AND LITERATURES

John Francis Latimer, *Chairman*
James Harold Coberly, *Secretary*

Educational Committee

Fred Salisbury Tupper, *Chairman*
John Francis Latimer
Gretchen Louisa Rogers

MATHEMATICS AND THE PHYSICAL SCIENCES

George Martin Koehl, *Chairman*
William Frederick Sager, *Secretary*

Educational Committee

Samuel Nathaniel Wrenn, *Chairman*
Thomas Benjamin Brown
Florence Marie Mears

NATURAL SCIENCES

Thelma Hunt, *Chairman*

Francis Lincoln Lambert, *Secretary*

Educational Committee

Angus MacIvor Griffin, *Chairman*

Chester Elwood Leese

Edith Elizabeth Mortensen

SOCIAL SCIENCES

Ronald Bettes Thompson, *Chairman*

Lawrence Daniel Folkemer, *Secretary*

Educational Committee

Harold Loran Geisert, *Chairman*

Donald Stevenson Watson

Roderic Hollett Davison

GENERAL INFORMATION

INTRODUCTORY

Columbian College was founded in 1821. James Monroe, then President of the United States, aided in obtaining the charter from Congress which established "The Columbian College in the District of Columbia" for the "sole and exclusive purpose of educating youth in the English, learned and foreign languages, the liberal arts, sciences and literature", with full power to confer all degrees "usually granted and conferred in colleges".

In 1930, when the Junior College was established, the name "Columbian College" was bestowed upon the senior college of liberal arts.

THE COLUMBIAN COLLEGE PROGRAM

In The George Washington University, the program for liberal arts and sciences extends from the general collegiate education of the Junior College (the freshman and sophomore years), through the instruction for the Bachelor's degrees of Columbian College (the junior and senior years), and the studies for the Master's degrees which are also in Columbian College, to the graduate discipline leading to the degree of Doctor of Philosophy, which is administered by the Graduate Council.

The purpose of Columbian College is to round out the program of liberal education begun in the Junior College and to bring to a focus educationally the individual talents and aptitudes of the student of liberal arts.

The program involves a comprehensive survey of a field of study, together with such knowledge of other fields as will contribute to the general educational development of the student. A field of study may be confined to one department or may involve a group of related courses in more than one department, or more than one division.

DIVISIONAL ORGANIZATIONS

The following divisions have been established in The George Washington University based on the relationship of course content, interrelation of methods and prerequisites, and similarity of background and viewpoint:

1. *The Division of Languages and Literatures.*—The departments of Classical Languages and Literatures, English, Germanic Languages and Literatures, and Romance Languages and Literatures.
2. *The Division of Mathematics and the Physical Sciences.*—The departments of Biochemistry, Chemistry, Mathematics, Pharmacology, Physics, and Statistics.
3. *The Division of the Natural Sciences.*—The departments of Anatomy, Bacteriology, Biology, Botany, Geography, Geology, Neurology, Pathology, Physiology, Psychology, and Zoology.
4. *The Division of the Social Sciences.*—The departments of Accounting, Business Administration, Economics, Education, History, Law, Philosophy, Political Science, Religion, Sociology, and Speech.

The departments under these University divisions function for Columbian College only in such fields of study as are appropriate for a senior college of arts, letters, and sciences.

REGULATIONS

Students in Columbian College are subject to, and are expected to familiarize themselves with, the regulations regarding ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 11-23, and the University regulations stated on pages 36-42.

PREREQUISITES

It is assumed that a student entering Columbian College has met the requirements of the Junior College under the *Arts and Letters* curriculum or the *Science* curriculum. Following is a summary of these prerequisites:

The *Arts and Letters* curriculum: (1) Freshman English (6 credit hours) and an additional sophomore-year course (6 credit hours) in English, American, or European literature. A first-group course in Art, Classical Languages, or Philosophy may be substituted for the sopho-

more course in English. (2) Two college years (at least 12 credit hours) of a single foreign language or the equivalent (see foreign-language requirement, page 55), are required. A transfer student who has had foreign-language courses in another institution meeting 4 or 5 times a week may have acquired as much as 12 credit hours in a foreign language without having taken four terms (two full years). Such a student is required to take additional work here in the same language until he has completed four terms (or an equivalent combination of high school years and college terms). (3) At least one year (6 credit hours) in social studies, chosen from first-group courses in History, Political Science, Economics, or Sociology, is required. (4) At least one year (6 or 8 credit hours) of a laboratory science (Biology, Botany, Chemistry, Physics, or Zoology), is required.

The remaining hours of the Junior College program (roughly a minimum of 22 to 24 hours) should be devoted to the prerequisite courses required by the prospective major department (as stated following the departmental staff in the courses of instruction section of the CATALOGUE) or recommended by the advisers in the field-of-study major (see pamphlets prepared by the respective advisers), together with appropriate electives.

The *Science* curriculum requirements in English are the same as those of the Arts and Letters curriculum, except that a year of a social study may be substituted for the sophomore requirement in English, Art, or Philosophy; in other words, the sophomore English and social studies requirements are combined, and may be met by taking at least 6 credit hours in English, Art, Classical Languages, Philosophy, or a social study. The foreign-language requirement is the same as for the Arts and Letters curriculum, except that French or German is specified. At least 6 credit hours in Mathematics must be taken; additional work in Mathematics is required of prospective majors in Chemistry or Physics. In science, the student should take courses in both biological and physical sciences, bearing in mind the prerequisites stated by the department under which he expects to major as well as specified prerequisites in certain departments (such as Mathematics and Chemistry for majors in Physics, or Mathematics and Physics for majors in Chemistry).

A transfer student admitted to Columbian College with deficiencies in freshman or sophomore work (whether in amount or in distribution of courses), corresponding to the program outlined above, is required to begin to make up such deficiencies immediately upon admission to Columbian College, and to carry courses for that purpose each term until all the general education requirements described above are satisfied. Students transferring from the School of Government must complete pre-Columbian College requirements in science and in Sophomore English (or Art, Classical Languages, or Philosophy), as prescribed in the Arts and Letters curriculum.

AMOUNT OF WORK

A full-time student who is not on probation may take ordinarily not more than seventeen credit hours. A student employed more than twenty-four hours a week, who is not on probation, may take not more than ten credit hours.

A full-time student whose quality-point index is 3.50 or higher may take not more than nineteen credit hours. An employed student who meets the same standard may take not more than twelve credit hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a term is required to report that fact immediately to the Dean, in order that adjustments in schedule may be made, if necessary, to bring his program within the Faculty's limitations upon the amount of work to be carried by an employed student.

ATTENDANCE

The student is held responsible for all the work of the courses in which he is registered, and all absences must be excused by the instructor in charge before provision is made for the student to make up the work missed. Excessive absence in any course will lead to loss of credit in that course, even though other requirements, such as tests, term-papers, and examinations are met.

CLASSIFICATION OF STUDENTS

A student who has completed less than thirty credit hours in Columbian College, and who has registered his major at the Office of the Registrar, is classed as a *junior*. A student who has completed thirty credit hours in Columbian College, including at least one course in his major, is classed as a *senior*. A student who has satisfactorily completed the work for the Bachelor's degree, and whose program of study has been approved and filed in the Office of the Registrar, is classed as a *master in course*.

INDEPENDENT STUDY PLAN

Under the independent study plan a student of demonstrated capacity, with special interest in the subject matter of a course, may be permitted to undertake independent study under the personal direction of an instructor, in accordance with the rules of the division in which the subject falls. Credit under this plan is limited to the specific course-credits as designated in the list of courses of instruction in the CATALOGUE.

CORRESPONDENCE AND HOME-STUDY COURSES

No credit is given for work done by correspondence or in home-study courses.

THE BACHELOR'S DEGREES

Upon the satisfactory completion of the undergraduate requirements of Columbian College, the degree of Bachelor of Arts or Bachelor of Science is conferred.

In cooperation with the School of Medicine a seven-year curriculum leading to the combined degrees of Bachelor of Arts and Doctor of Medicine is offered.

REQUIREMENTS FOR THE DEGREES

RESIDENCE

For the residence requirement, see page 40.

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 36 and 37.

In order to graduate, a student must have a general quality-point index of at least 2.00. In addition, he must have a quality-point index of at least 2.50 in his major subject.* Grades in courses taken at other institutions are not considered in computing the quality-point index.

In computing the quality-point index in the major, all second-group and third-group courses in the major field taken at The George Washington University are included, even though minimum requirements for the major may have been exceeded, except when registration for graduate credit is approved. Grades received in first-group courses are not considered.

Probation.—A student must maintain a quality-point index of at least 2.00, or be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Committee on Scholarship.

Suspension.—A student who has a quality-point index below 1.00 or who is placed on probation for a third term, whether successive or after an interval, is suspended.

A student suspended for poor scholarship may apply for readmission after an interval of a calendar year. He must then submit evidence to the Committee on Admission and Advanced Standing that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

For the purpose of these rules, the summer sessions are considered a term.

* Except in a Field-of-Study Major.

The foregoing scholarship rules are applied to a student with a limited schedule only when he has undertaken a minimum of fifteen credit hours.

CURRICULUM REQUIREMENTS

The curriculum requirements for the Bachelor's degrees include at least sixty credit hours beyond the requirements of the Junior College (the curriculum in *Arts and Letters* or in *Sciences*) and the satisfactory completion of the major. Each program must be approved by the major adviser and by the Dean.

At least twenty-four credit hours of the last sixty credit hours counted towards the Bachelor's degree must be taken in subjects* not included in the major field or department. The student should consult his major adviser at each registration regarding the inclusion in his program of suitably distributed electives, with a view to meeting this requirement before graduation.

Except for students registered for the combined degrees of Bachelor of Arts and Doctor of Medicine, not more than twelve credit hours of professional courses may be included in the one hundred and twenty credit hours required for the Bachelor's degrees in Columbian College. Columbian College students electing professional courses under this rule must obtain the approval, in advance, of the Dean of Columbian College.

After selecting a curriculum, a student may not change to another except by permission of the Dean and on condition that he fulfill the requirements of the curriculum to which he changes as of the date when the change is approved by the Dean.

Each student is required to select and file with the Registrar a choice of major upon entering Columbian College. He may change the major only with the consent of the Dean and of the department or division concerned, and must meet the requirements for the major to which he changes as of the date when the change is approved by the Dean.

First-group courses may be required as prerequisites to undergraduate-major programs, but because of their introductory character may not be counted as part of such programs. (See "Explanation of Course Numbers".)

Examinations for Waiving Curriculum Requirements.—A student desiring to omit a required or prerequisite course may take such examination as the department prescribes, and, on passing satisfactorily, he may be relieved of the curriculum or prerequisite requirement in that subject and may qualify for registration in an advanced course. Passing of this examination shall not entitle him to any credit toward the degree. A student desiring to take such examinations should make written request

* Art, Biology, Botany, Chemistry, Classical Languages and Literatures, Economics, English, Geography, Geology, Germanic Languages and Literatures, History, Journalism, Mathematics, Philosophy, Physics, Political Science, Psychology, Religion, Romance Languages and Literatures, Sociology, Speech, Statistics, Zoology.

of the Dean and pay the required fee at the Office of the Comptroller before the date of the examination specified in the University calendar.

Use of Correct English.—Any student whose English in any course whatever is deemed unsatisfactory may be reported by the instructor to the Dean and to the Committee on the Use of English. The Chairman of the Committee may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed by failure to make up any such deficiency in English to the satisfaction of the Committee and the Dean.

Bachelor of Arts

The work of the junior and senior years, including a major in one of the following major fields, must be approved by the major adviser and by the Dean.

Major Fields.—American Thought and Civilization, Art (Appreciation or Drawing and Painting), Biology, Botany, Chemistry, Economics, English Literature, French Literature, Geography, Geology, Germanic Languages and Literatures, History, Journalism, Latin American Civilization and Culture, Mathematics, Philosophy, Physics, Political Science, Psychology, Religion, Sociology, Spanish American Literature, Spanish Literature, Speech (Public Speaking, Theatre, or Speech Correction), Statistics, Zoology.

Combined Degrees of Bachelor of Arts and Doctor of Medicine.—A candidate for the combined degrees of Bachelor of Arts and Doctor of Medicine must: (1) complete the premedical college requirements (see page 15); (2) fulfill the Columbian College residence requirement of at least thirty credit hours; (3) obtain the approval of the Dean of Columbian College at the time of entering the School of Medicine; (4) obtain the recommendation of the Dean of the School of Medicine at the completion of all prescribed courses in the first year of the School of Medicine, at which time the degree of Bachelor of Arts will be conferred (professional work taken at another institution will not satisfy the major requirement for the combined degrees); (5) maintain throughout the entire course the scholarship level required for graduation.

Bachelor of Science

The work of the junior and senior years, including a major in one of the sciences mentioned below, must be approved by the major department or division and by the Dean.

Biological Sciences

Biology
Botany
Zoology

Physical Sciences

Chemistry
Mathematics
Physics
Statistics

THE UNDERGRADUATE MAJOR *

There are two types of undergraduate majors: the field-of-study major; and the departmental major.

THE FIELD-OF-STUDY MAJOR

Each Field-of-Study Major covers a carefully worked out field of coordinated study and is under the supervision of the division or divisions concerned.

The *Field-of-Study Major* requires no specific number of credit hours, no specific program of courses, and no specific quality-point index for the major, although the student is required to meet the over-all general requirements for the degree (at least 120 credit hours, plus required physical education, with a quality-point index at 2.00). The Major Examination in the Field-of-Study Major replaces all of the traditional quantitative and qualitative requirements for a major. Ability to pass the Major Examination is assumed to be a convincing demonstration that the student possesses the breadth, depth, and quality of knowledge of his major usually defined in terms of credit hours, courses, grades, and a better-than-average quality-point index. A pamphlet prepared under the direction of the adviser in the field of study and obtainable either from the adviser or from the Office of the Dean of Columbian College provides the information needed by the prospective student, who should place himself under the direction of the appropriate adviser immediately upon completing Junior College work and beginning his junior year (the first senior-college year) in Columbian College.

The Field-of-Study Major places special emphasis on the intellectual development of the individual student. Programs in the same major may vary, depending upon the individual student's background, previous study, reading habits, and aptitudes. The student is expected to consult his adviser frequently, and the special proseminar offered in the field gives him further opportunity for individual advice and direction in pursuing a program especially adapted to his needs and abilities. A close student-adviser relationship is essential for the student's success under the Field-of-Study Major plan.

The following Field-of-Study Majors are offered: (1) American Thought and Civilization, (2) Biology, (3) English Literature, (4) French Literature, (5) History, (6) Latin American Civilization and Culture, (7) Philosophy, (8) Spanish American Literature, (9) Spanish Literature, (10) Statistics, (11) Zoology.

The major in Biology extends broadly over the work of its division; and those in American Thought and Civilization and in Latin American Civilization and Culture involve studies in two divisions, those of

* For a complete description of the undergraduate major, see the special bulletin.

Languages and Literatures and of Social Studies. The other Field-of-Study Majors, with the exception of the major in Spanish American Literature, replace departmental majors in their respective fields. A candidate for a Bachelor's degree with a major in Biology, English Literature, French Literature, History, Philosophy, Spanish Literature, Statistics, or Zoology must elect a Field-of-Study Major.

Proseminar in the Major

For the convenience of the student a proseminar is offered in each field of study, under the supervision of the division in which the major is taken. This course, planned and administered by the professor or adviser of the major subject, will advise, guide, and instruct the student in his reading, study, and laboratory exercises in order to assist him in gaining a coordinated knowledge of his field. It is a presentation of the content and methods of the major field as a whole through the organization and coordination of the knowledge obtained in the various formal courses in the major subject and of material not usually included in such courses. This course is not required. Six credit hours, but no qualitative grade, may be assigned. When registered in this course, the student will have the privilege of visiting, subject to the approval of the instructor, any other course offered in the College. (Regular attendance in a course, either for credit or as an auditor, requires registration and payment of tuition.) Proseminars are open only to the student who has been accepted as a candidate under that specific major.

THE MAJOR EXAMINATION

The Major Examination will normally be taken by the student at the close of the senior year; in the case of a student on a limited schedule, the Major Examination may be taken not earlier than one calendar year before graduation. A student who fails to pass a Major Examination may, at the discretion of the Columbian College Committee on Studies, be reexamined at a later regular major-examination period. The educational committees of the respective divisions will have general supervision of the preparation, reading, and grading of Major Examinations. Major Examinations will be held in each regular term on dates fixed by the respective educational committees, but in no case later than January 15 for the fall term, May 15 for the winter term, and August 7 for the summer term.

DEPARTMENTAL MAJORS

Departmental Majors, unlike Field-of-Study Majors, are specifically defined in terms of credit hours, required courses, and the attainment of a quality-point index of at least 2.50 in all second-group courses taken in the major field. The minimum specific requirements for De-

partmental Majors are listed below the staff of instruction of the department concerned in the section of the CATALOGUE devoted to courses of instruction. The Executive Officer of the Department, or his representative at registration, should be consulted concerning the student's program of courses, and the entire program, including electives, must be approved by the Department. The student is also expected to consult the Executive Officer or adviser in all matters affecting his program of studies, such as changes, substitutions, or withdrawals, and especially concerning his progress in his courses. As far as possible the close student-adviser relationship developed in the Field-of-Study Major will be cultivated also in Departmental Majors.

Until further notice Departmental Majors will be offered in the following: Art (Appreciation, Drawing and Painting), Botany, Chemistry, Economics, Geography, Germanic Languages and Literatures, Journalism, Mathematics, Physics, Political Science, Psychology, Religion, Sociology, and Speech (Public Speaking, Theatre, Speech Correction).

THE MASTER'S DEGREES

Upon the satisfactory completion of the graduate requirements of Columbian College, the degree of Master of Arts or Master of Science is conferred.

DEFINITION OF THE MASTER'S WORK

The study leading to the degree of Master of Arts or Master of Science is a comprehensive survey of a field of knowledge. It is a continuation of the work of the student's undergraduate major and involves a greater acquaintance with scholarly method.

The student must satisfy certain minimum requirements as to previous preparation, residence, ability to read an approved modern foreign (European) language, and courses taken; but these requirements, while essential, are regarded primarily as qualifying measures. The student's knowledge of his field, as demonstrated by his thesis and by the results of his Master's Examination (together with such other examinations involving special skills or techniques as the department or division may require), is the basis upon which the Master's degree is conferred.

MASTER OF ARTS

Graduate work leading to the degree of Master of Arts is offered in the following fields:

American Literary and Cultural History, Bacteriology, Biochemistry,

Biology, Botany, Chemistry, Dramatic Art, Economics, English and American Literature, English Literature, French Literature, Geography, Germanic Languages and Literatures, History, International Relations, Latin American Civilization and Culture, Mathematics, Philosophy, Physics, Physiology, Political Science, Psychology, Sociology, Spanish American Literature, Spanish Literature, Statistics, Zoology.

Special programs involving coordinated work in two or more departments may be arranged with the approval of the appropriate division or divisions.

MASTER OF SCIENCE

Graduate work leading to the degree of Master of Science is offered in the following fields:

Bacteriology, Biochemistry, Biology, Botany, Chemistry, Mathematics, Physics, Physiology, Psychology, Statistics, Zoology.

Special programs involving coordinated work in two or more departments may be arranged with the approval of the appropriate division or divisions.

REQUIREMENTS FOR THE DEGREES

RESIDENCE

An academic year of residence in Columbian College is required, i.e., completion of a minimum of thirty credit hours of work including the thesis, which is counted as the equivalent of six credit hours of course work. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than twenty-seven weeks. Not more than twelve credit hours (which must be approved in advance by the Dean of Columbian College) may be taken in another school or division of this University, and such work may not be counted toward both a degree in that school or division and the Master's degree in Columbian College. No part of the minimum requirement may be taken elsewhere. All work for the degree of Master of Arts or Master of Science must be completed within a maximum of three years, unless the Dean's Council considers the circumstances so unusual as to justify an extension of time.

SCHOLARSHIP

A student whose scholarship is unsatisfactory may be suspended by the Dean upon recommendation of the Division under which the student is working. Regarding the system of grading, see pages 36 and 37.

PROGRAM OF STUDIES

The student's program of studies must be outlined in detail at the beginning of his work, in triplicate, on forms available at the Office of the Dean. Each program is subject to the approval of the department and the division. The program may be revised as the occasion requires, but any change necessitates a repetition of the procedure just described.

Courses numbered from 1 to 100 may not be credited toward the Master's degrees, but may in certain instances be required as a basis for advanced work. (See "Explanation of Course Numbers".)

A student who expects to continue his studies for the degree of Doctor of Philosophy after receiving the Master's degree is strongly advised so to plan his program from the beginning that work for the lower degree may help to prepare him for the higher.

ADMISSION TO CANDIDACY

A student must be admitted to candidacy before he begins the last half of his work for the Master's degree. Application for admission to candidacy is made on a form obtained at the Office of the Registrar, and must be approved by the appropriate representative of the department or division and by the Dean. If a prospective candidate, in his previous academic work, has not substantially satisfied the prerequisites for the Master's degree, including the undergraduate major as defined by the appropriate department or division, he will not be admitted to candidacy until such deficiency has been made up. He may make up his deficiencies by electing appropriate courses in addition to those counted towards his degree.

Before being admitted to candidacy the student must also show that he has a reading knowledge (certified by the appropriate foreign-language department) of at least one modern foreign (European) language, selected by the division under which he is studying. A student whose field is a modern foreign language or literature may not offer that language in satisfaction of the reading-knowledge requirement. Examinations in modern foreign languages will ordinarily be given only on the dates specified in the University calendar. In exceptional circumstances the respective departments will arrange for examinations at other times.

THE MASTER'S THESIS

The thesis may be of a research, expository, critical, or creative type. The main purpose of a Master's thesis is to demonstrate the student's ability to make independent use of the information and training acquired through his other disciplines, and to furnish objective evidence of his constructive powers in his chosen field. Registration for the thesis must be no later than the beginning of the final year of preparation, unless the professor in charge of the thesis permits registration at the beginning of the final term. The choice of the thesis subject must be approved by the professor in charge of the student's field and recorded in the Office of the Registrar by the date announced in the University calendar. Registration for the thesis is ordinarily made on the basis of three credit hours a term for two successive terms. In exceptional cases, and with the approval of the professor in charge of the thesis, the student may register

for the entire six credit hours during a single term. The typewritten thesis in its final form must be submitted by the student for the approval of the professor in charge of the student's field and of the educational committee of the division concerned, not later than the date announced in the University calendar. Requirements regarding the form of the thesis are stated on page 40, and additional information will be supplied by the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the two-year period the student must register for it again, and pay tuition on the same basis as for a repeated course.

THE MASTER'S EXAMINATION

In addition to such other examinations as may be required, the candidate must pass a general written examination on the major subject. Examinations will be held on dates fixed by the respective educational committees, but in no case later than January 15 for the fall term, May 15 for the winter term, and August 7 for the summer term. The provisions of the field-of-study plan for undergraduate majors which concern the general examination for the major also apply to the Master's Examination. A candidate who fails to pass the Master's Examination may, in exceptional circumstances and with the specific approval of the division concerned, repeat the examination, but only after the lapse of one term. If he fails a second time, no further opportunity to take the examination will be permitted.

THE GRADUATE COUNCIL

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*

Robert Whitney Bolwell, Ph.D., *Chairman of the Graduate Council*

MEMBERS OF THE COUNCIL

Thomas Benjamin Brown, Ph.D., *Professor of Physics*

Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*

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Joseph Hiram Roe, Ph.D., *Professor of Biochemistry*

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Lawson Edwin Yocum, Ph.D., *Professor of Botany*

John Withrow Brewer, Ph.D., *Professor of International Law*

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Paul Kenneth Smith, Ph.D., *Professor of Pharmacology*

Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*

Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*

Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*

* On sabbatical leave winter term 1950-51.

- *George Winchester Stone, Jr., Ph.D., *Professor of English Literature*
 Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
 Warren Andrew, Ph.D., M.D., *Professor of Anatomy*
 Chester Elwood Leese, Ph.D., *Professor of Physiology*
 ‡Donald Stevenson Watson, Ph.D., *Professor of Economics*
 Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
 William Webster Diehl, Ph.D., *Adjunct Professor of Mycology*
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 Woligang Herbert Kraus, Dr. Jur., S.J.D., *Associate Professor of Political Science*
 Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 Roderic Hollett Davison, Ph.D., *Associate Professor of European History*

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- Carl Robert Brewer, Ph.D., *Chief, Bacterial Nutrition Branch, Basic Sciences Division, Chemical Corps, Camp Detrick; Bacterial Nutrition*
 Dean Burk, Ph.D., *Principal Chemist, National Cancer Institute; Tissue Respiration in Biochemistry*
 Gerhard Colm, Dr. rer. pol., *Economist, Council of Economic Advisers, Executive Office of the President; Public Finance*
 Paul Simon Galtsoff, Ph.D., *Senior Biologist, Fish and Wildlife Service, United States Department of the Interior; Invertebrate Zoology*
 Fred Latimer Hadsel, Ph.D., *Office of German and Austrian Affairs, Division of German Political Affairs, United States Department of State; International Politics and Organization*
 James Manson Hundley, B.S., M.D., *Assistant Chief, Laboratory of Biochemistry and Nutrition, and Chief, Section on Physiology and Biochemistry of Nutrition, National Institutes of Health; Physiology of Nutrition*
 William Crane Johnstone, Jr., *Director of the Office of Educational Exchange, United States Department of State; International Relations: The Far East*
 Thomas Carlyle Jones, B.S. in Veterinary Medicine, D.V.M., *Chief, Veterinary Pathology Section, Army Institute of Pathology; Comparative Pathology*
 Solomon Kullback, Ph.D., *Chief, Research and Development Division, United States Department of Defense; Statistics: Multivariate Analysis*

* On sabbatical leave 1950-51.

‡ On sabbatical leave winter term 1950-51.

- Ladislaus Laszlo Marton, Ph.D., *Physicist, Atomic Physics, Electronics Division, National Bureau of Standards; Electron Optics*
- Elliott Waters Montroll, Ph.D., *Head, Physics Branch, Office of Naval Research; Theoretical Physics*
- Waldo Lasalle Schmitt, Ph.D., *Head Curator of Zoology, United States National Museum; Invertebrate Zoology: Crustacea*
- Leonard Peter Schultz, Ph.D., *Curator of Fishes, United States National Museum; Vertebrate Zoology: Ichthyology*
- Lyman Bradford Smith, Ph.D., *Associate Curator, Division of Phanerogams, Department of Botany, Smithsonian Institution; Taxonomy*
- Alberto Vázquez, Ph.D., *Chief, North and West Coast Branch American Republics Area Division, United States Department of State; Latin American Literature*
- Henry Welch, Ph.D., *Chief, Division of Penicillin Control and Immunology, United States Food and Drug Administration; Antibiotics*
- Willard Hull Wright, D.V.M., Ph.D., *Scientist Director, United States Public Health Service, and Chief, Zoology Laboratory, National Institutes of Health; Parasitology*

GENERAL INFORMATION

INTRODUCTORY

The Graduate Council offers a program of advanced study and research leading only to the degree of Doctor of Philosophy. It was established in 1930 to replace the Graduate School which had formerly administered work for the Master's as well as the Doctor's degrees. The Graduate Council provides a doctoral discipline which moves freely across administrative lines dividing departments of instruction or fields of study. It gives personal supervision to a limited number of students, each of whom has his own consultative committee, examinations, and research direction.

FIELDS OF RESEARCH

The following fields of research have been authorized by the Graduate Council as those in which doctoral investigations and dissertations may be undertaken. The supporting fields of study required of all candidates for the degree of Doctor of Philosophy are specified for each individual student by his Consultative Committee before admission to study under the Council.

This list of fields is subject to such change as the educational resources of the University may direct. The prospective student may address preliminary inquiries concerning his research interests to the member of the Council who is in charge of the field, or to the Chairman of the Graduate Council.

Anatomy	
(1) Gerontology; (2) Cytology	Andrew
Bacteriology	
(1) Intestinal Microbiology; (2) Immunity in Tuberculosis; (3) Problems in Medical Bacteriology with especial reference to Diagnostic Methods and Immunization	Parr
(1) Intestinal Microbiology; (2) Immunology: Antigenic Analysis	Griffin
Bacterial Nutrition	Brewer
Antibiotics	Welch
Virology	To be arranged
Biochemistry	
(1) Carbohydrate Metabolism; (2) Nutrition (emphasis on vitamins); (3) Pathological Chemistry	Roe
Lipids	Treadwell
Tissue Respiration	Burk
Biology	
Cytology	Bowman
Botany	
(1) Mycology; (2) Plant Pathology	Diehl
Plant Physiology	Yocum
Taxonomy	Smith
Chemistry	
Organic	Wrenn
Inorganic	Naeser
Physical: Solubilities	Van Evera
Economics	
Economic Theory: (1) Economic Fluctuations; (2) History of Economic Thought	Burns
Economic Policy: (1) Economic Planning; (2) Public Finance	Watson
(1) National Income; (2) Public Finance	Colm
International Economics	To be arranged
History	
European: Nationalism	Kayser
European: (1) Diplomatic since 1815; (2) The Modern Near East	Davison
United States: (1) Social; (2) Economic	Gray
United States: (1) Diplomatic; (2) Political	Merriman
Latin American: (1) Spanish and Portuguese Colonies in America; (2) Nineteenth and Twentieth Century History; (3) Inter-American Relations	Wilgus
Law	
Trade Regulation: Trade Practices and Antitrust Laws	Oppenheim
Jurisprudence	Collier
Literatures and Languages	
English: (1) Sixteenth Century Drama; (2) Seventeenth Century Drama	Tupper
English: Eighteenth Century Drama	Stone
American: Literary Nationalism	Bolwell
German: (1) Germanic Philology; (2) Comparative Philology	Schrt
Romance: (1) Romance Linguistics; (2) Old and Middle French; (3) Old Spanish	Doyle

Romance: Modern Spanish Literature	Alonso
Romance: Latin American Literature	Vázquez
Romance: (1) Sixteenth Century French Literature; (2) Modern French Literature	Keating
Romance: Seventeenth Century French Literature	Protzman
Mathematics	
Algebra: Finite Groups	Johnston
Geometry: Differential Geometry	Taylor
Analysis: Infinite Series	Mears
Pathology	
Comparative Pathology	Jones
Pharmacology	
(1) Chemotherapy; (2) Drug Metabolism	Smith
Physics	
Experimental: Electronics	Brown
Electron Optics	Marton
Theoretical: (1) Relativity; (2) Nuclear; (3) Astrophysics	Gamow
Theoretical: The Solid State	Montroll
Physiology	
(1) Nutrition and Endocrines; (2) Cardiovascular System	Albritton
(1) Blood Pressure Studies; (2) Neuro-Muscular Studies	Leese
Physiology of Nutrition	Hundley
Political Science	
United States: (1) The Legislative Process; (2) Governmental Organization and Administration	West
International: The Far East	Johnstone
International: Comparative Government and Political Theory	Kraus
International: International Politics and Organization	Hadsel
International Law: (1) War and Neutrality; (2) Arbitration	Brewer
Psychiatry	
Problems of Treatment (M.D. degree required for admission.)	Overholser
Psychology	
(1) Personnel Psychology; (2) Counseling and Guidance	Dreese
(1) Psychological Measurements; (2) Abnormal Psychology	Hunt
Social Psychology	Tuthill
Statistics	
(1) Theoretical: Probability and Sampling; (2) Applied: Econometrics	Weida
Multivariate Analysis	Kullback
Zoology	
Invertebrate: Morphology and Embryology	Young
Invertebrate: Molluscan Morphology and Physiology	Galtsoff
Parasitology: Parasitic Protozoa	Wright
Vertebrate: Embryology and Morphogenesis	Hansen
Vertebrate: Ichthyology	Schultz
Invertebrate: Crustacea	Schmitt

ADMISSION PROCEDURE

For admission the student must possess adequate preparation for advanced study, including satisfactory Bachelor's and Master's degrees, or the equivalent, together with acceptable personal qualities and a capacity for creative scholarship. Previous graduate study should have been in the same general field as that proposed for doctoral study.

Before applying, the student should have personal interviews with the Chairman of the Council and the professor in charge of the central field of study.

After application blank and transcripts of previous academic training have been filed the student must demonstrate his ability to read either French or German in the field of his major interest. Both French and German are required without exception, but only one at the time of admission. The student then meets his personal admission committee which makes its recommendations to the Council. The committee may specify additional prerequisites for the student's doctoral program.

STUDY FOR THE COUNCIL FELLOWSHIP EXAMINATION

The discipline for the degree is divided into two stages. The first is made up of study in related fields of learning which support the general area of research concentration, culminating in the Council Fellowship Examination. The second stage is composed of research and investigation of a particular project in a special field and the presentation of such research in a written dissertation, culminating in the Final Examination.

At the beginning of the student's program of study leading to the Council Fellowship Examination, a consultative committee is assigned to direct his work in a group of fields of learning, usually five or six in number, deemed necessary to insure his breadth of knowledge and general competence for continuing independent research, as well as to support the dissertation project in his central field. Members of the consultative committee will advise the student concerning the scope and content of these supporting fields, and will assist the student in preparation for his examination in them.

This advanced study may be done by attending courses of instruction and graduate seminars, by conference with members of the student's committee, and by independent means. The examination, however, not credits or grades for work done in courses, is the sole test of the student's ability to enter upon the second phase of his doctoral discipline. The examination is a series of written tests usually extending over a period of one week. The major portion of a day is given to each part of the examination covering one of the fields of study on the student's program. If the results of the examination are satisfactory the student

is admitted as a Fellow of the Graduate Council, to pursue his specialized study and research under the supervision of a member of the Council.

RESEARCH, THE DISSERTATION, AND THE FINAL EXAMINATION

After the student has been inducted as a Fellow of the Council and his research program has been arranged, he is responsible only to the member of the Council who directs his research project. As a Fellow, he may attend general meetings of the Council and participate in the programs of research discussion, and enjoy unrestricted use of all the academic facilities of the University. When necessary, the Graduate Council makes provision for sending the Fellow to some other institution, library, or laboratory for special study in connection with his doctoral investigation.

The doctoral dissertation is required of all Fellows as evidence of ability to perform scholarly research and to interpret its results. An extended summary of the dissertation is published in a periodical volume by the University for distribution to other institutions and libraries. Printed copies of detailed regulations concerning the dissertation are supplied to all candidates for the doctorate.

When the completed dissertation has been approved by the member of the Council in charge of the research project, the Fellow is presented for his final examination. This examination is oral and open to the public. The committee of examiners includes not only members of the Council competent in the research field or in closely related subjects, but also at least two qualified experts from other research institutions brought to the University to participate in the examination. If the Fellow satisfies the examining committee concerning the high quality and originality of his contribution to knowledge as well as his mastery of the scholarship and research techniques of his field, the Council recommends him for the degree of Doctor of Philosophy.

POST-DOCTORAL STUDY

The Council expects its graduates to continue their interest in advanced study and research, and to contribute to its program. All graduates are listed as Associate Fellows and, upon request, will receive notices of all general meetings. They may continue any studies in the University without payment of tuition, and enjoy all University library privileges. Such graduates are required to pay only the usual residence fee in order to establish their active membership in the University. The use of laboratory space and equipment is contingent upon availability, and the cost of all laboratory or special library materials is paid by the graduate. Special arrangements for such privileges must be made with the Chairman of the Council. Post-doctoral work may not be applied toward any degree offered by the University.

REGULATIONS

Candidates and Fellows in the Graduate Council are subject to, and are expected to familiarize themselves with, the regulations regarding REGISTRATION, FEES AND FINANCES stated on pages 11-23, and the University regulations stated on pages 36-42.

RESIDENCE AND CONTINUOUS REGISTRATION

The Graduate Council expects all students to work on their doctoral programs in residence, although there is no formal regulation concerning the minimum amount of time of resident study either in preparation for the Council Fellowship Examination or as a Fellow of the Council engaged in doctoral research. The student who undertakes either part of the doctoral program on full or limited schedule must, in accordance with University regulations, maintain continuous registration under the Graduate Council even when the Council has granted a leave of absence for study or residence elsewhere. Failure to maintain registration in each term of the academic year disrupts the residence status of the student. In such a case, the student must reapply for admission to the Council, under whatever new conditions and regulations are set up by his consultative committee or the member of the Council who directs his research.

TEACHING FELLOWSHIPS AND GRADUATE ASSISTANTSHIPS

A limited number of Teaching Fellowships are assigned annually to certain departments of instruction open to doctoral students registered under the Graduate Council. An announcement regarding qualifications and application for these fellowships will be sent upon request to the Office of the Graduate Council.

In many departments of instruction graduate assistants are appointed to assist in the academic program. Applicants should inquire directly of the executive officer of the department concerned regarding vacancies and details of appointment.

A pamphlet describing details of the Graduate Council program, together with a current list of fields of research offered by the Council, will be sent upon request to the Office of the Graduate Council.

THE SCHOOL OF MEDICINE

THE FACULTY

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Dean of the School of Medicine*

Thomas Martin Peery, A.B., M.D., *Director of Postgraduate Instruction*

Joseph Hiram Roe, Ph.D., *Professor of Biochemistry*

Walter Freeman, Ph.D., M.D., *Professor of Neurology*

Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Professor of Medicine*

Errett Cyril Albritton, A.B., M.D., *Fry Professor of Physiology*

Roger Morrison Choisser, B.S., M.D., *Professor of Pathology*

Leland Wilbur Parr, Ph.D., *Professor of Bacteriology*

Winfred Overholser, A.B., M.D., Sc.D., *Professor of Psychiatry*

Frederick A. Reuter, M.D., *Professor of Urology*

Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology*

Daniel Bruce Moffett, A.B., M.D., *Professor of Oto-rhino-laryngology*

John Parks, M.S., M.D., *Professor of Obstetrics and Gynecology*

Preston Alexander McLendon, B.S., M.D., *Professor of Pediatrics*

Brian Blades, A.B., M.D., *Professor of Surgery*

Paul Kenneth Smith, Ph.D., *Professor of Pharmacology*

James Winston Watts, B.S., M.D., *Professor of Neurological Surgery*

Warren Andrew, Ph.D., M.D., *Professor of Anatomy*

Chester Elwood Leese, Ph.D., *Professor of Physiology*

Thomas McPherson Brown, A.B., M.D., *Professor of Medicine*

Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*

Ronald Atmore Cox, A.B., M.D., *Professor of Ophthalmology*

Ernest Alired Watson Sheppard, M.D., C.M., *Clinical Professor of Ophthalmology*

Radford Brown, M.D., *Clinical Professor of Obstetrics and Gynecology*

Thomas Carlton Thompson, B.S., M.D., *Clinical Professor of Urology*

Daniel LeRay Borden, A.M., M.D., *Clinical Professor of Surgery*

Thomas Martin Peery, A.B., M.D., *Associate Professor of Pathology*

Carleton Raymond Treadwell, Ph.D., *Associate Professor of Biochemistry*

William Woodrow Stanbro, M.D., *Associate Professor of Radiology*

Charles Samuel Wise, B.S., M.D., *Associate Professor of Physical Medicine*

William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*

Victor Fred Ludewig, A.B., B.S., *Superintendent of the University Hospital*

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Winfred Overholser

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Angus MacIvor Griffin

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• The President of the University and the Dean of the School of Medicine are members ex officio of all committees.

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Walter Freeman

Brian Blades

Winfred Overholser

Thomas McPherson Brown

John Parks

Lewis Kaigler Sweet

GENERAL INFORMATION

INTRODUCTORY

The School of Medicine of The George Washington University was opened in March 1825; of the medical schools now in existence in the United States, it is the eleventh in chronological order of founding. The University Hospital and Dispensary were established in 1898 and made a part of the organization of the School.

The School is a member of the Association of American Medical Colleges and is one of the medical colleges which have been designated continuously as "class A" by the American Medical Association. The degrees of the School of Medicine are recognized by all state examining boards.

PLAN OF INSTRUCTION

The work of the School is organized under the following departments: Anatomy; Anesthesiology; Bacteriology, Hygiene, and Preventive Medicine; Biochemistry; Dermatology and Syphilology; Medicine; Military Science and Tactics; Neurology and Neurological Surgery; Obstetrics and Gynecology; Ophthalmology; Oto-rhino-laryngology; Pathology;

Pediatrics; Pharmacology; Physical Medicine; Physiology; Psychiatry; Radiology; Surgery; and Urology.

The salient features in the method of instruction are thorough laboratory training, demonstrations, and clinical teaching, with recitations and lectures to clarify the many problems presented. Courses of clinical instruction are included in the announcements of the clinical departments. The clinical material in the various hospitals and outpatient departments is utilized to the fullest extent for both clinical instruction and laboratory work.

Each of the first three years of the medical curriculum is divided into two terms of sixteen weeks. The senior year includes, in addition, an eight-week summer term. One half of the senior class will begin the summer term immediately upon completion of the junior year; the other half will begin eight weeks later. Within certain limitations, the students may elect the period of attendance and the service of their assignment. There will be no formal classes or examinations during this period.

EQUIPMENT AND FACILITIES

The George Washington University Hospital.—The hospital, with a capacity of 400 beds, was opened in 1948. This splendid edifice, which is one of the outstanding hospitals in the United States, is completely furnished with the latest and most scientific apparatus and equipment. Its purpose is to supplement existing hospital resources in the District of Columbia for the care of the sick and the injured; the education of physicians, nurses, and technicians; and the advancement of medical knowledge.

The hospital is staffed and controlled by the Faculty of the George Washington University School of Medicine and it provides excellent clinical material for the instruction of medical students. Virtually every specialty in the fields of medicine and surgery has assigned space and equipment in both the outpatient department and the bed-patient section of this modern institution.

Medical School Building.—The building housing the School of Medicine is a five-story structure with lecture rooms and classrooms, laboratories, and students' rooms.

Laboratories.—A four-story laboratory building is adjacent to the main medical building. The major laboratories are for anatomy, histology and embryology, bacteriology, hygiene and preventive medicine, biochemistry, pathology, pharmacology and physiology, and clinical microscopy. They are fully equipped to enable students to pursue adequately the laboratory courses and to acquire the technical skill necessary in modern clinical and investigative work.

Research Building.—The Research Building houses the George Washington University Cancer Clinic and special laboratories concerned with

the biochemical, physiological, and cytological aspects of cancer research; the surgical and anesthesia research laboratories; a laboratory for radio-isotope investigation; and research laboratories of the Physiology, Neurology, and Cardiovascular departments.

Medical Library.—The Medical Library contains a selected reference collection of more than 10,000 volumes, currently obtains important new medical works, and regularly receives the principal medical journals.

Inter-library loan service is maintained by close cooperation with other medical and scientific libraries throughout Washington and vicinity.

The Medical Library is open from 9:00 A.M. to 9:00 P.M. each class day, Monday through Friday, and from 9:00 A.M. to 1:00 P.M. Saturday.

The Medical Library maintains a branch in Room 6037-A of the University Hospital for reference, research, and inter-library loan service. It is open from 2:00 to 6:00 P.M. Monday through Friday.

GOVERNMENT LIBRARIES AND MUSEUMS

The Library of the Surgeon General's Office of the United States Army is the most complete general medical library in the world. In addition to its great collections of medical works, all leading medical periodicals of the world are available. This Library, as well as the Library of Congress, the Public Library, and the many excellent libraries of the various government departments, is available to students and teachers through a service maintained by the Medical School Library.

The Army Medical Museum affords opportunity for studying the conditions met in military and general medicine and surgery. Its collection of anatomical and pathological specimens is unequaled by any other museum in this country. The Museum of Hygiene, the National Museum, the Smithsonian Institution, the Botanic Gardens, and the Department of Agriculture all afford opportunities for study in Medicine and its allied sciences.

CLINICS

The city of Washington, with about a million inhabitants, provides ample clinical material. The University Hospital and Outpatient Department furnish clinical facilities and a large proportion of the materials studied in the courses in pathology and clinical pathology.

The University Hospital.—All clinics are under the supervision of the Dean, who is also Medical Director of the Hospital. This insures the highest possible utilization of available clinical material for teaching purposes and the proper supervision of clinicians and students; it brings the individual student into direct contact with patients and requires him to do, under authoritative supervision, the clinical and laboratory work necessary for diagnosis and treatment; and it permits proper interpretation of the conditions occurring during the progress of cases and promotes

the keeping of adequate records. Clinical and clinico-pathological conferences are held in which the history of cases, the physical findings, laboratory records, and the post-mortem pathology when available, are presented and correlated.

The Outpatient Department.—The Outpatient Department has clinical facilities for each Service in the Hospital. Fourth-year students are assigned in rotation by section for clinical instruction in the Outpatient Department.

Cancer Clinics.—The facilities of the Cancer Detection Clinic are available to medical students. In addition the diagnosis and treatment of various forms of neoplasms are presented. The results of the treatment of neoplasms are evaluated by follow-up studies.

The Helen L. and Mary E. Warwick Memorial, for cancer and allied diseases, was affiliated with The George Washington University in July 1948. The purposes of this clinic are (1) to provide care for cancer patients, through group consultations within a cancer organization, and (2) to provide training for physicians in the field of oncology.

Gallinger Municipal Hospital.—Clinical instruction is available in all branches of medicine. A great wealth of clinical material is afforded in this hospital and by ordinance of the municipal authorities of the District of Columbia, members of the Faculty of this School of Medicine, who are nominated by this University, are assigned approximately one-third of the patients for treatment and clinical study. Third-year students serve their clinical clerkships at this institution.

Childrens Hospital.—Clinical instruction in pediatrics, dermatology, and orthopedic surgery.

Emergency Hospital and Central Dispensary.—Clinical instruction in medicine, surgery, and the specialties.

St. Elizabeths Hospital.—Clinical instruction in mental and nervous diseases, medicine, post-mortem work, and gross pathology. This hospital, with 6,577 beds, is maintained by the United States Government. The psychiatric clinic is one of the largest in the world.

Mt. Alto Hospital.—Clinical instruction in medicine and surgery is available and fourth-year students are assigned in rotation by sections for clinical clerkships.

Walter Reed General Hospital.—Clinical instruction is available in all branches of medicine and surgery. Fourth-year students are assigned in rotation by sections for clinical instruction.

ADMISSION, REGISTRATION, FEES AND FINANCIAL REGULATIONS

Students in the School of Medicine are subject to, and are expected to familiarize themselves with, the regulations stated on pages 11-23.

Registration in the School of Medicine is for a period of one academic

year. After the student has entered the courses of instruction he is obligated for the full tuition for the academic year. No part of the tuition will be refunded upon withdrawal or dismissal for any cause. Acceptance by the School of a student's fees does not in any way obligate the School to accept the student for any subsequent year.

A fee of \$3 to defray the costs of completing the records for final consideration for admission must accompany each application. This fee applies to students whose premedical training was completed at this University as well as to students who have not previously attended this University. Fees for each term are \$325, payable in advance.

Because the number of applicants far exceeds the limit of each class, places can be reserved for only those qualified applicants who remit a deposit of \$100 which will be credited toward the tuition of the first term. Should the matriculant be unable to attend, this initial payment, less a charge of \$50 for registration, transfer, etc., will be returned up to one month before the opening of the term.

Credit for work will not be given until, at the completion of a laboratory course, the student has replaced or paid for all articles of equipment or other University property which he has lost, broken, or destroyed. All breakage or loss not directly traceable to an individual student is assessed *pro rata*.

COST OF TEXTBOOKS AND STUDENT EQUIPMENT

The minimum cost of necessary textbooks and student equipment (microscope, drawing materials, glass slides, clinical thermometer, stethoscope, hemocytometer, etc.) is approximately as follows: first year, \$400; second year, \$250; third year, \$90; fourth year, \$80; total \$820.

A fee of \$1 a term is charged for the use (optional) of a locker.

REGULATIONS

Students in the School of Medicine are subject to and are expected to familiarize themselves with, the general University regulations stated on pages 36-42.

ABSENCE

Absence is not allowed unless an excuse is obtained from the Dean or the instructor.

Absence consists in being away from a class or clinic during a scheduled period, entering after the class or clinic has begun, or leaving before either is dismissed.

Excuse for absence due to sickness must be accompanied by a certificate signed by the attending physician and must be filed in the office of the Dean.

For every unexcused absence a department will deduct one-half of one per cent from the student's final grade in the subject involved.

GRADES

The following grading system is used: *A* (90-100); *B* (80-89); *C* (75-79); *D* (65-74) condition; *E* (below 64) failure; *Inc.*, incomplete. The passing grade in each subject is *C*.

A student who is conditioned in any subject will not be advanced until such condition is removed and then only by authority of the Committee on Scholarship. All conditions must be removed at the next make-up examination period provided for this purpose.

EXAMINATIONS

Examinations, which may be written, oral, or practical, will be held at the end of each term.

A student who fails to appear at a regularly scheduled final examination will not be examined until the next regular examination, except by special permission of the Committee on Scholarship. For make-up examinations to remove conditions, a fee of \$5 will be charged for each subject.

All students in the School of Medicine are required to take Part I and Part II of the National Board Examinations, except that students from those states and foreign countries which do not recognize the National Board may be exempted from Part II by action of the Committee on Scholarship.

PHYSICAL EXAMINATIONS •

All first-year students are given a comprehensive physical examination upon admission to the School of Medicine. The students are informed of the findings and advised regarding such measures as will tend to maintain a high standard of health.

In addition medical students benefit from the complete Tuberculosis Case Finding Program which the School has maintained since 1938-39. Under this program all students receive tuberculin tests, X-ray examinations, and such special attention from chest specialists as is necessary to reduce to a minimum the dangers from tuberculosis to which medical students are believed to be subject. Students are immunized against those diseases for which proven prophylactics exist.

• A charge of \$2 is made if a student fails to appear for a physical examination during the period set for this purpose.

RESERVE OFFICERS' TRAINING CORPS, U. S. ARMY,
MEDICAL UNIT

A Medical Unit of the Reserve Officers' Training Corps is established in this School by authority of the Secretary of the Army, and an officer of the Medical Corps of the Army is detailed to the University for supervision and instruction of the unit.

The instruction is divided into two two-year courses, the basic and the advanced. Each course consists of 90 hours a year—58 hours of prescribed medical instruction given by the Medical School and 32 hours of military medical instruction. Students who satisfactorily complete the basic course may, up to the quota allowed by the Department of the Army, enter the advanced course. Students in the advanced course receive, from the Government, a stipend of approximately \$700.

Students in the advanced course are required to complete the course and to attend a summer training period of six weeks.

A student who successfully completes the course is recommended for a commission in the Medical Corps Reserve, if he desires appointment. It is the policy of the Department of the Army to give preference to graduates of this course in the selection for Army internship.

Membership in the Unit, which is voluntary, is open to any physically fit male student who is a citizen of the United States and who is, at the time of enrollment, within the following specified age limits; under 26 years of age for the basic course, under 29 for the advanced course. For veterans of World War II, there is no age limit until January 1, 1952, for the advanced course. Veterans with a minimum of six months' service receive credit for the first year of the basic course; those with a minimum of twelve months' service receive credit for both years of the basic course.

THE DEGREE OF DOCTOR OF MEDICINE

Upon the satisfactory completion of the requirements of the School of Medicine, the degree of Doctor of Medicine is conferred.

REQUIREMENTS FOR THE DEGREE

Every candidate for graduation with the degree of Doctor of Medicine must be at least twenty-one years of age, of reputable character, and free of all indebtedness to the University. He must have satisfied the admission requirements, completed satisfactorily not less than four academic years of study as a matriculated student in Medicine, completed all required courses, and passed satisfactorily all prescribed examinations.

COMBINED ARTS AND MEDICINE CURRICULUM

In order to be recommended for the degree of Bachelor of Arts, the candidate must complete at least ninety credit hours of prescribed college work (at least thirty credit hours and one year of residence must be completed in Columbian College, the senior liberal arts college), and the first year of the medical curriculum. Upon satisfactory completion of the fourth year of the medical curriculum the student becomes eligible for the degree of Doctor of Medicine.

HONORS

A candidate who has completed the four-year medical course with an average grade of *A* may be recommended for graduation "with distinction."

INTERN AND RESIDENT TRAINING PROGRAM

The George Washington University offers twenty internships which are divided into two categories of ten straight medical and ten straight surgical. All interns, regardless of the Service to which they are assigned, will be given a period of training in obstetrics and gynecology.

Accredited resident training will be offered in Anesthesiology, Medicine, Neurology, Obstetrics and Gynecology, Ophthalmology, Oral Surgery, Pathology, Radiology, and Surgery.

POSTGRADUATE INSTRUCTION

The School of Medicine offers annually a series of short intensive postgraduate courses, varying somewhat from year to year. The series is designed for physicians in practice. The significant advances in the various specialties are presented, together with summaries of older information. A distinguished Guest Faculty supplements the Staff of the Medical School.

The Kellogg Medical Lectures, inaugurated in 1948, are a series of evening lectures and clinics, designed primarily for physicians practicing in Washington and vicinity. They are also attended by the Faculty, postgraduate students, and members of the senior class of the School of Medicine.

During the academic year 1948-49 approximately 500 physicians were enrolled in postgraduate courses. For application blanks and further information, address the Director of Postgraduate Instruction, The George Washington University Hospital, Washington 7, D. C.

TECHNICIAN TRAINING COURSES

ORTHOPTIC TECHNICIAN TRAINING COURSE

A six-month course, of 675 hours of clinical and classroom work, is offered for the training of orthoptic technicians by the Department of Ophthalmology.

MEDICAL TECHNOLOGISTS COURSE

The course for medical technologists consists of twelve consecutive months of didactic and practical work in all phases of clinical laboratory technique. The course meets the full requirements of the Registry of Medical Technologists of the American Society of Clinical Pathologists. Prerequisites are 60 credit hours (two academic years) of college work including required credits in biology and chemistry.

Two classes are accepted each year, one entering in September and the other in February. Enrollment in each class is strictly limited so that personal instruction can be given.

Upon satisfactory completion of the course a certificate is awarded and the candidate is eligible for the certifying examination given by the Registry of Medical Technologists.

For application blanks and further information, address the Director of Laboratories, The George Washington University Hospital, Washington 7, D. C.

THE LAW SCHOOL

THE FACULTY AND STAFF OF INSTRUCTION •

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
 Oswald Symister Colclough, B.S., LL.B., LL.D., *Dean of the Law School*
 _____, *Assistant Dean of the Law School*
 Louis Harkey Mayo, B.S., LL.B., *Secretary of the Law School*

William Cabell Van Vleck, A.B., LL.B., S.J.D., LL.D., *Professor of Law*
 Charles Sager Collier, A.B., LL.B., S.J.D., *Professor of Law*
 William Thomas Fryer, A.B., LL.B., J.D., *Professor of Law*
 Saul Chesterfield Oppenheim, A.M., J.D., S.J.D., *Professor of Law*
 Carville Dickinson Benson, A.B., LL.B., S.J.D., *Professor of Law*
 James Forrester Davison, A.B., LL.B., LL.M., S.J.D., *Professor of Law*
 James Oliver Murdock, Ph.B., LL.B., *Professor of Law*
 Oswald Symister Colclough, B.S., LL.B., LL.D., *Professor of Law*
 George Bowdoin Craighill, A.B., LL.B., *Adjunct Professor of Law*
 James Ward Morris, A.B., *Adjunct Professor of Law*
 James Robert Kirkland, A.B., LL.B., LL.M., *Adjunct Professor of Law*
 Bolitha James Laws, LL.B., LL.M., *Adjunct Professor of Law*
 Conder Caywood Henry, A.B., LL.B., *Adjunct Professor of Law*
 John Wingfield Jackson, B.S., LL.B., *Adjunct Professor of Law*
 Elliott DeJarnette Marshall, LL.B., *Adjunct Professor of Law*
 Frank Hammett Myers, LL.B., LL.M., *Adjunct Professor of Law*
 Alvin Leroy Newmyer, LL.B., *Adjunct Professor of Law*
 John Albert McIntire, A.B., LL.B., *Professorial Lecturer in Law*
 Justin Lincoln Edgerton, A.B., LL.B., *Professorial Lecturer in Law;*
Clerk of the Moot Court
 Karl Rhorer Price, A.B., LL.B., *Professorial Lecturer in Law*
 Philip Field Herrick, A.B., LL.B., LL.M., *Professorial Lecturer in Law*
 Raymond Stevens Smethurst, B.S., LL.B., *Professorial Lecturer in Law*
 Francis Gerald Toye, B.S. in E.E., LL.B., *Professorial Lecturer in Law*
 George Edward Monk, A.B., LL.B., LL.M., *Professorial Lecturer in*
Law
 Louis Loss, B.S., LL.B., *Professorial Lecturer in Law*
 Charles Sylvanus Rhyne, LL.B., *Professorial Lecturer in Law*
 Jennings Bailey, Jr., LL.B., *Professorial Lecturer in Law*
 Robert McKinney Cooper, Ph.M., J.D., *Associate Professor of Law*

• The President of the University, the Dean and the Assistant Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, and Assistant Professors constitute the Faculty.

Leroy Sorenson Merrifield, A.B., LL.B., M.P.A., *Associate Professor of Law*

John Patrick Burke, A.B., LL.B., *Associate Professor of Law*

Herman Israel Orentlicher, A.B., LL.B., *Associate Professor of Law*

*John Theodore Fey, LL.B., M.B.A., *Associate Professor of Law*

David Benson Weaver, A.B., LL.B., *Assistant Professor of Law*

William Lester Griffin, A.B., LL.B., LL.M., *Assistant Professor of Law*

Louis Harkey Mayo, B.S., LL.B., *Assistant Professor of Law*

Arthur Selwyn Miller, A.B., LL.B., *Assistant Professor of Law*

William Leigh Ellis, A.B., LL.B., LL.M., *Lecturer in Law*

John Alexander Kendrick, A.B., LL.B., *Assistant Clerk of Moot Court*

COMMITTEES‡

THE DEAN'S COUNCIL

Carville Dickinson Benson

Charles Sager Collier

James Forrester Davison

William Thomas Fryer

Leroy Sorenson Merrifield

James Oliver Murdock

Saul Chesterfield Oppenheim

William Cabell Van Vleck

COMMITTEE ON ADMISSIONS

Carville Dickinson Benson, *Chairman*

Saul Chesterfield Oppenheim

Harold Griffith Sutton

COMMITTEE ON GRADUATE STUDIES

Charles Sager Collier, *Chairman*

James Forrester Davison

James Oliver Murdock

Saul Chesterfield Oppenheim

COMMITTEE ON SCHOLARSHIP

Herman Israel Orentlicher, *Chairman*

Carville Dickinson Benson

Leroy Sorenson Merrifield

LIBRARY COMMITTEE

James Oliver Murdock, *Chairman*

Robert McKinney Cooper

David Benson Weaver

* On leave of absence 1950-51.

‡ The President of the University and the Dean and the Assistant Dean of the Law School are members ex officio of all committees.

GENERAL INFORMATION

INTRODUCTORY

The George Washington University Law School, established in 1826, discontinued, and reorganized in 1865, is the oldest law school in the District of Columbia. Its course of instruction is planned to prepare its graduates for the practice of law in any of the states of the United States or in foreign countries, the law of which is based on the Anglo-American legal system. It is also designed to prepare students for public service as lawyers in the Federal Government or the governments of the states. In 1900 the School took part in the organization of the Association of American Law Schools and it has been a member of the Association since that time. The School is approved by the Section of Legal Education and Admission to the Bar of the American Bar Association.

THE LIBRARY

The Law School Library of 27,000 volumes contains the official reports of the decisions of the courts of last resort of all the states prior to the National Reporter System and of fourteen states complete to date; the National Reporter System, complete; the reports of the United States Supreme Court and lower federal courts, and the reports of federal administrative agencies; Shepard's Citations for the units of the Reporter System; the English Reprint and English Law Reports; the United States Statutes; the United States Code, Annotated, and the Federal Code, Annotated; reasonably complete sets of statutes of all of the states; the English statutes; the principal English and American digests and encyclopedias; collections of special reports and annotated cases; and the leading textbooks and legal periodicals.

The Library, which is on the fourth floor of Stockton Hall, is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday, 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday. Books and other materials do not circulate and must be used in the Library.

THE LAW REVIEW

The George Washington Law Review, published by the University, is edited by the Faculty and students of the Law School. It is devoted exclusively to state and federal public law. The location of the University in the national Capital, where the primary sources of federal public law may be observed in operation, affords an unexcelled opportunity for specialization in this field.

The *Review* is edited by a faculty editor-in-chief, a faculty board of associate editors, a board of departmental advisory editors, and a board

of student editors. The student editors are chosen each year on the basis of scholarship.

RESEARCH IN PUBLIC LAW

Washington, the capital of the Nation, furnishes unsurpassed advantages for research in the fields of public law. In it are the offices of the major executive departments, the Congress, the Supreme Court of the United States, and four lower federal courts. In the executive departments and among the many independent establishments of the Federal Government there have been estimated to be between seventy-five and one hundred agencies, the activities of which involve the various branches of public law, particularly administrative law. The student of public law can study at first hand the work of these administrative agencies. He also has available as sources for investigation their records of administrative adjudications.

Research in public law will be conducted under the supervision of members of the faculty. The purpose of this research is to furnish means for training specialists in public law, either as government lawyers or as lawyers representing individuals or corporations in cases in which the Government is a party, and to assist in the analysis, clarification, formulation, and improvement of public law, substantive and procedural.

Candidates for the graduate degrees in the Law School and seniors who are eligible for the degree of Juris Doctor may pursue this work. Other students may be admitted with the special permission of the professor in charge.

COURSE OF STUDY FOR FOREIGN LAWYERS

This course of study is designed to meet the needs of lawyers who come from countries, the legal systems of which are based on the Roman or Civil Law. The objective is to provide an opportunity for such students to acquire an understanding of the fundamentals of the common law so that they may work intelligently with its materials and practitioners. In this program the students are not assigned to special classes but work in association with other students in the regular law subjects. No fixed program of courses is required. Each student's program is adapted to his individual needs.

THE STUDENT BAR ASSOCIATION

Every student in the Law School is required to be a member of the Student Bar Association. This is organized to enable the student to become better acquainted with problems of the profession, to develop better professional ideals, and to bring about closer contact with members of the profession engaged in active practice of the law.

The work of the Student Bar Association is carried on by various committees and by group and general meetings of a professional and social nature. From time to time lectures are given by outstanding authorities on legal and professional problems.

The Placement Committee of the Student Bar Association cooperates with the University Placement Office in assisting students and graduates of the Law School to find employment.

PRACTICE AND PRACTICE COURT

The curriculum is planned to include such training in the fundamentals of practice as is feasible in a law school. Classroom instruction is conducted in the theories of pleading and procedure, trial and appellate practice, and evidence. This instruction includes grounding in the principles of the new Federal Rules of Civil Procedure. In addition each senior student is required to participate in the work of the Practice or Moot Court. This includes trying a specified number of cases, both as a senior counsel and junior counsel. For students who are planning to practice patent law, a special section of the court is devoted exclusively to the trial of patent cases. Experience in preparing and arguing appellate court cases is also available through the Case Club Competition.

ORDER OF THE COIF

The Order of the Coif, a national honor society with chapters in thirty-eight law schools, aims "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship". The George Washington University Chapter was established in 1926. Members are elected each year from the highest-ranking 10 per cent of the graduating class of the Law School.

REGULATIONS

Students in the Law School are subject to, and are expected to familiarize themselves with, the following regulations and the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 11-23, and the University regulations stated on pages 36-42.

ORGANIZATION OF THE YEAR

The work of the year is organized into three terms known as the fall term, winter term, and summer term. The summer term is divided into two eight-week sessions, which together constitute a full term.

HOURS OF INSTRUCTION

Forenoon classes are held from 9:10 A.M. to 1:00 P.M.

Primarily for the accommodation of employed students, a regular course may be taken in classes held from 5:50 to 7:40 P.M.

AMOUNT OF WORK

Students without substantial outside employment may take a program of studies of fourteen hours a week in which the majority of credit hours must be in the morning sections. Students with substantial outside employment must take a limited program of studies not exceeding ten hours a week. Students taking a majority of their classes in the evening may not take more than ten credit hours a week.

ATTENDANCE

Regular attendance on classes is required and is necessary for successful work. A student who is deficient in class attendance in any subject may, by action of the Faculty, be barred from taking the examination in that subject.

RESIDENCE REQUIREMENTS

Attendance in the morning classes for the fall and winter terms is counted as residence for an academic year. Attendance in the evening classes for the fall and winter terms is counted as residence for three-fourths of an academic year. A morning student enrolled in a schedule of less than ten hours a week will receive residence credit in the ratio that the hours passed bear to ten. An evening student enrolled in a schedule of less than six hours a week will receive residence credit in the ratio that the hours passed bear to six. Attendance throughout the summer term, morning or evening, is counted the same for residence purposes as like attendance during the fall or winter term.

No student admitted with advanced standing will be recommended for the degree of Bachelor of Laws until he has completed in this School at least one year of residence and passed successfully twenty-eight credit hours with the average required for the degree.

EXAMINATIONS

Written examinations are held at the end of each course. Every student is required to take the regular examinations in the subjects pursued, unless excused. No excuse for absence will be granted except by the Dean and then only for illness or other emergency. Application for excuse must be made in writing not later than one month after the date of the examination. A grade of *NG* (no grade) will be entered on the record of a student thus excused, and he may take the next regularly scheduled examination in the subject for which the excuse has been granted.

No special examinations will be given; except that, upon written application to the Faculty, showing sufficient cause, a candidate for a degree at a convocation before the next regular examination, if he would be

entitled to take a postponed examination, may, at the discretion of the Faculty, be given a special examination.

If a student fails to take an examination, a grade of *F* (to be counted as zero) will be recorded, unless the student has obtained the Dean's permission to drop the course according to regulations stated on pages 37 and 38, or to be excused from the examination.

GRADES

Grades are indicated by the letters *A*, excellent, 85-100; *B*, good, 75-84; *C*, satisfactory, 65-74; *D*, poor, 55-64—below standard for graduation; *F*, failed—below 55; and *NG*, no grade—student excused from failure to take regularly scheduled examination. See "Examinations" above, for grade upon failure to take an examination.

The grades *A*, *B*, *C*, and *D*, mean that the work has been completed and credit given for the subjects.

F, failed, means that no credit will be given. To obtain credit the student must repeat the subject; but a student who has obtained an average of *C* in the work of an academic year and received a grade of *F* in only one subject may take the next regular examination in that subject, and if on such reexamination he obtains a passing grade he will be given credit in the subject. Both grades are recorded.

EXCLUSION AND PROBATION FOR POOR SCHOLARSHIP

A student who during two successive terms fails in courses aggregating eight or more credit hours will be excluded at the end of the term for which he is currently registered. Such a student is not eligible thereafter to be registered in the Law School or to attend classes. After exclusion he may, however, with the consent of the Faculty, be admitted to the next regular examinations in those subjects in which he has made a grade below passing, and if he receives a grade of passing in these subjects with an average sufficient to make his general average not less than *C*, he will be reinstated.

A student not subject to exclusion under the foregoing rule who at any time fails to maintain a general average of at least *C*, will be on probation during the next two terms in which he is registered. A student on probation may at the discretion of the Dean be required to reduce his program of study. If a student on probation does not make, during the probationary period, grades sufficient to give him a general average of at least *C*, he will be excluded at the end of the term for which he is currently registered.

The general average of a student includes all the grades in all the subjects taken while he is in the Law School as a candidate for a particular degree. When a subject is repeated or a reexamination is taken, both the first grade and the subsequent grade or grades are counted in the general average.

In special cases in which it is clear that the student's failure does not indicate lack of ability to pursue the study of law, the student who has become subject to exclusion may be readmitted by the Faculty.

CLASSIFICATION OF STUDENTS

Students are divided into classes on the completion of credit hours as follows: first year, one through twenty-eight; second year, twenty-nine through fifty-six; third year, fifty-seven or more.

THE DEGREES

IN THE PROFESSIONAL COURSE

These degrees are Bachelor of Laws (LL.B.) and Juris Doctor (J.D.).

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF LAWS

To be recommended for this degree the student must have completed: a residence period of not less than three academic years (four years for evening students) and eighty credit hours, with a general average of at least *C*, including the course in Moot Court.

REQUIREMENTS FOR THE DEGREE OF JURIS DOCTOR

This degree is conferred as a recognition of the completion at the George Washington University Law School, with high rank, of the full professional course including experience in research and legal authorship. To be recommended for this degree the student must have completed: (1) a residence period of not less than three academic years (four years for evening students) in the Law School; (2) eighty credit hours with a general average of at least *B* including the course in Moot Court and one of the following courses: Comparative Law, Jurisprudence, or one of the graduate seminars; and (3) one year of acceptable service on the board of student editors of *The George Washington Law Review*, election to which is subject to regulations laid down by the Faculty. Students taking the combined Arts and Law or Engineering and Law courses are not eligible for this degree.

HONORS

The degree of Bachelor of Laws or of Juris Doctor "with distinction" will be awarded students who obtain a general average of *A* in the work for the degree.

IN THE GRADUATE COURSE

These degrees are Master of Laws (LL.M.), Master of Comparative Law (M.Comp.L.), and Doctor of Juridical Science (S.J.D.).

REQUIREMENTS FOR THE DEGREE OF MASTER OF LAWS

To be recommended for this degree the student must have completed a residence period of not less than two terms. Such residence should normally be continuous. All requirements for the degree must be completed in this Law School and in a period not exceeding two years after registration for work for the degree. The student must have completed with a minimum average of *B* twenty credit hours in courses listed in the law curriculum as graduate subjects (in the 400 group) except that in individual cases third-year subjects may be approved for inclusion in the program of study if not previously taken.

REQUIREMENTS FOR THE DEGREE OF MASTER OF COMPARATIVE LAW

To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed satisfactorily twenty-four credit hours in approved subjects in the curriculum of the Law School or of such other departments of the University as the Faculty of the Law School shall approve.

**REQUIREMENTS FOR THE DEGREE OF DOCTOR
OF JURIDICAL SCIENCE**

To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have pursued a course of study and research designated by his consultative committee and approved by the Committee on Graduate Studies. At the conclusion of his first year of residence, or at such other time as the Committee on Graduate Studies may set, the candidate must pass an oral examination in those fields of study selected by the consultative committee. This examination shall be conducted by the consultative committee and such other members of the Faculty and qualified experts from other research institutions as may be selected by the Committee on Graduate Studies.

Not later than the date specified in the University calendar the candidate must submit to the Dean one typewritten original and two legible and complete carbon copies of his dissertation in its final form. The dissertation must contain a summary of from 2,500 to 3,000 words inserted as an appendix. An additional original typewritten copy of this summary must be submitted for publication. To be acceptable the dissertation must, in the opinion of the examining committee, constitute a substantial contribution to the field of law concerned and be suitable for publication. Additional information will be supplied by the Chairman of the Committee on Graduate Studies.

The summaries of accepted dissertations will be printed in a volume forming a number of the University BULLETIN. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

THE SCHOOL OF ENGINEERING

THE FACULTY AND STAFF OF INSTRUCTION *

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Frederick Morris Feiker, B.S. in E.E., D.Eng., *Dean of the School of Engineering*

Carl Hugo Walther, B.E., M.C.E., *Assistant Dean of the School of Engineering*

Thomas Benjamin Brown, Ph.D., *Professor of Physics*

Arthur Frederick Johnson, M.E., Ph.D., *Professor of Mechanical Engineering*

Norman Bruce Ames, M.S., E.E., LL.B., *Professor of Electrical Engineering*

James Henry Taylor, Ph.D., *Professor of Mathematics*

‡Frank Mark Weida, Ph.D., *Professor of Statistics*

Frederick Morris Feiker, B.S. in E.E., D.Eng., *Professor of Engineering Administration*

Merle Irving Protzman, Ph.D., *Professor of Romance Languages*

Benjamin Carpenter Cruickshanks, B.S. in M.E., *Professor of Mechanical Engineering*

Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*

Carl Hugo Walther, B.E., M.C.E., *Professor of Civil Engineering*

Bruce Douglas Greenshields, C.E., Ph.D., *Professor of Civil Engineering*

Forest Klaire Harris, Ph.D., *Professorial Lecturer in Electrical Engineering*

Waldo Edward Smith, B.E., M.S. in C.E., *Professorial Lecturer in Civil Engineering*

Robert Gay Trumbull, B.S. in C.E., *Associate Professor of Mechanical Engineering*

Wolfram Karl Legner, Ph.D., *Associate Professor of German*

Raymond Pugh Eyman, C.E., *Associate Professor of Civil Engineering*

William Sutton Carley, M.S. in E.E., *Associate Professor of Electrical Engineering*

Averett Howard, A.M., *Associate Professor of English Composition*

Charles Edward Greeley, B.S. in M.E., *Associate Professor of Mechanical Engineering*

* The President of the University, the Dean and the Assistant Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Associate Professors, and Assistant Professors constitute the Faculty.

‡ On sabbatical leave winter term 1950-51.

- James Joseph Kerley, Jr., A.B. in C.E., *Assistant Professor of Civil Engineering*
 Frederick Henry Kohloss, B.S. in M.E., LL.B., *Assistant Professor of Mechanical Engineering*
 Haaren Albert Miklofsky, B.C.E., M.Eng., *Assistant Professor of Civil Engineering*
 William Thomas Dickinson, M.S. in E.E., *Assistant Professor of Electrical Engineering*
 Jerome Strauss Antel, Jr., B.S. in E.E., *Assistant Professor of Electrical Engineering*
 Rudolph Michel, M.S. in M.E., *Lecturer in Mechanical Engineering*
 Moses Freedman, B.S. in Eng., *Lecturer in Civil Engineering*
 Edgar Stover Walker, B.S. in C.E., *Lecturer in Civil Engineering*
 Edward Frederick Kelley, M.S., Ae.E., *Lecturer in Mechanical Engineering*
 William Gammon Hayward, B.S. in C.E., *Lecturer in Civil Engineering*
 Thomas Alvin O'Halloran, B.E.E., *Lecturer in Electrical Engineering*
 Dwight Edward Shytte, *Lecturer in Electrical Engineering*
 Bernard Bernstein, B.S., B.M.E., *Lecturer in Mechanical Engineering*
 Alvin Raymond Schwab, B.S., M.S. in Eng., *Lecturer in Civil Engineering*
 Malcolm Richardson Moore, B.E.E., *Lecturer in Electrical Engineering*
 Richard Lee Fenton, B.M.E., *Lecturer in Mechanical Engineering*
 Asriel Taragin, B.E., *Lecturer in Civil Engineering*
 Ralph Brady, B.S. in E.E., *Lecturer in Electrical Engineering*
 Frank Spaulding Borden, B.C.E., *Lecturer in Civil Engineering*
 William Clayton Justice, B.S. in Eng., *Lecturer in Mechanical Engineering*
 Jerome Addison Lee, B.S., *Lecturer in Electrical Engineering*
 Mark Michael Kiley, A.M. in Eng., *Instructor in Civil Engineering*

THE DEAN'S COUNCIL *

1951

Norman Bruce Ames
 Bruce Douglas Greenshields

1952

James Henry Taylor
 Charles Rudolph Naeser

1953

Benjamin Carpenter Cruickshanks
 Raymond Pugh Eyman

* Elected by the Faculty. The President of the University and the Dean and the Assistant Dean of the School of Engineering are members ex officio of the council.

GENERAL INFORMATION

INTRODUCTORY

The School of Engineering was organized in 1884 as the Corcoran Scientific School. In 1903 that school was combined with Columbian College in the Department of Arts and Sciences. In 1905 the engineering courses were placed under an administrative organization known as the Washington College of Engineering and in 1909 the name was changed to the College of Engineering and Mechanic Arts. In 1914 the name became the School of Engineering.

Courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, and Bachelor of Electrical Engineering are accredited by the Engineers' Council for Professional Development, the recognized accrediting body of the engineering profession, composed of representatives of the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, the American Institute of Electrical Engineers, American Society for Engineering Education, the American Institute of Chemical Engineers, and the National Council of State Boards of Engineering Examiners.

REGULATIONS

Students in the School of Engineering are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 11-23, and the University regulations stated on pages 36-42.

AMOUNT OF WORK

Eighteen credit hours, including required physical education, constitute normal full-time work. Nine credit hours constitute normal part-time work.

A full-time student who is not on probation may take ordinarily not more than nineteen credit hours. A student employed more than twenty-four hours a week, who is not on probation, may take ordinarily not more than ten credit hours. A student whose quality-point index is 3.00 or higher may be permitted by the Dean to exceed these limits by not more than two credit hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a term is required to report that fact immediately to the Dean, in order that adjustments in schedule may be made, if necessary, to bring his program within the Faculty's limitations upon the amount of work to be carried by an employed student.

ATTENDANCE

The student is expected to attend every meeting of the course in which he is registered fully prepared to carry on the work required. The student is held responsible for all work in the course, and all absences must be excused before provision will be made for him to make up the work missed. Excuses for absences from examinations which have been announced in advance can be obtained only by making written application to the instructor in charge of the course.

THE BACHELOR'S DEGREES

The Bachelor's degrees are: Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering.

The degree of Bachelor of Science in Engineering may be earned with any of the following options: Business Administration, Chemistry, Economics, Mathematics, Physics, or Statistics.

REQUIREMENTS FOR THE DEGREES

SCHOLARSHIP

The system of grading and computing scholarship is described in detail on pages 36 and 37.

In order to graduate, a student must have a quality-point index of at least 2.00.

Probation.—A student must maintain a quality-point index of at least 2.00, or be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Dean's Council.

Suspension.—A student who has a quality-point index below 1.00 will be suspended. A student who becomes subject to probation for the third time, whether successive or after an interval, will be suspended.

A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. He must then submit evidence to the Dean's Council that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

The foregoing scholarship regulations are applied when a student has completed a minimum of twelve credit hours of work. Thereafter, the regulations are applied in multiples of twelve credit hours.

USE OF CORRECT ENGLISH

Any student whose English in any course whatever is deemed unsatisfactory may be reported by the instructor to the Dean's Council. The Council may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed for failure to make up any such deficiency in English to the satisfaction of the Dean's Council.

The foregoing regulation is to be interpreted as applying to both written and spoken English.

RESIDENCE

One year, or thirty-six credit hours, must be completed in residence in the School of Engineering. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue work elsewhere, the work of the senior or final year must be completed in residence.

CURRICULUM REQUIREMENTS

The satisfactory completion of one of the following curricula of 140 credit hours, exclusive of physical education, is required.

Physical Education is required of all students in the freshman and sophomore years. (See, "Physical Education Requirements", page 39.)

Variations from the prescribed curricula may be made, with the permission of the Dean's Council. A student desiring to omit a required course and substitute another must make written application to the Dean, presenting satisfactory reasons for the substitution; and written approval must be obtained before registration for the course.

FRESHMAN YEAR (FOR ALL ENGINEERING CURRICULA)		Hours Credit
Chem 11-12	General Chemistry	8
CE 2	Plane Surveying	1
Engl. 1-2	Freshman English	6
Math. 12	Plane Analytic Geometry	3
Math. 19	Differential Calculus	3
ME 1	Engineering Survey and Orientation	1
ME 3	Mechanical Drawing	2
ME 4	Descriptive Geometry	2
Phys. Ed.	See page 39 for statement of requirement.	
*Phys. 6 and 7	General Physics	6
Total.....		14

* The student who begins Physics with Physics 6 or 7 is subject to a qualifying examination. Credit will be given for Physics 5 if not used for entrance requirements.

Bachelor of Civil Engineering

SOPHOMORE YEAR

		Credit Hours
CE 21	Analytical Mechanics: Statics	2
CE 22	Analytical Mechanics: Dynamics	3
CE 23	Higher Surveying	4
EE 9-10	Elements of Electrical Engineering	6
Geol. 21-22	Physical and Historical Geology	6
Math. 20	Integral Calculus	3
Phys. Ed.	See page 39 for statement of requirement.	
Phys. 8	General Physics	3
Elective	Economics 1-2 or modern language	6
Elective	.....	3
Total.....		36

JUNIOR YEAR

		Credit Hours
CE 25-26	Engineering Materials	4
CE 123	Strength of Materials	3
CE 136	Hydraulics	3
CE 140	Materials and Hydraulics Laboratory.....	2
CE 141	Graphic Statics	3
CE 142	Bridge Stresses	3
CE 164	Highway Engineering	3
CE 171	Route Surveying	3
CE 187-88	Engineering Contracts and Specifications.....	4
ME 111-12	Thermodynamics	6
Speech 21	Public Speaking	3
Total.....		37

SENIOR YEAR

		Credit Hours
CE 147-48	Structural Design	4
CE 149-50	Concrete and Masonry Construction	6
CE 151-52	Statically Indeterminate Structures	4
CE 181-82	Water Supply and Sewerage	6
CE 189-90	Civil Engineering Proseminar	2
ME 141-42	Management Problems	4
Elective	.....	7
Total.....		33

Bachelor of Electrical Engineering

SOPHOMORE YEAR		Credit Hours
CE 21	Analytical Mechanics: Statics	2
CE 22	Analytical Mechanics: Dynamics	3
EE 9-10	Elements of Electrical Engineering	6
Math. 20	Integral Calculus	3
Math. 132	Differential Equations	3
ME 13-14	Mechanism	4
Phys. Ed.	See page 39 for statement of requirement.	
Phys. 8	General Physics	3
Phys. 55	Physical Measurements	2
Speech 21	Public Speaking	3
Elective	Economics 1-2 or modern language	6
Total.....		35
JUNIOR YEAR		Credit Hours
I. Communications Option		
CE 123	Strength of Materials	3
EE 105-6	Direct-Current Laboratory	4
EE 107	Alternating-Current Circuits	3
EE 108	Alternating-Current Machinery	3
EE 111-12	Electrical Measurements	4
EE 118	Advanced Network Theory I.....	3
EE 120	Advanced Network Laboratory I.....	2
ME 111-12	Thermodynamics	6
Phys. 132	Electronics	3
Elective	.....	4
Total.....		35
SENIOR YEAR		Credit Hours
CE 25-26	Engineering Materials	4
CE 136	Hydraulics	3
EE 109	Alternating-Current Machinery	3
EE 119	Advanced Network Theory II.....	3
EE 121	Advanced Network Laboratory II.....	2
EE 133-34	Alternating-Current Laboratory	4
EE 142	Radio Wave Propagation	3
EE 148	Applications of Electronic Devices	3
EE 150	Electronic Devices Laboratory	2
EE 189-90	Proseminar in Electrical Engineering	2
Phys. 133	Electronics	3
Elective	.....	4
Total.....		36

JUNIOR YEAR

Credit
Hours

2. Power Option

CE 123	Strength of Materials	3
CE 136	Hydraulics	3
EE 105-6	Direct-Current Laboratory	4
EE 107	Alternating-Current Circuits	3
EE 108	Alternating-Current Machinery	3
EE 111-12	Electrical Measurements	4
EE 137	Electric Traction	2
ME 111-12	Thermodynamics	6
Phys. 132	Electronics	3
Elective	.....	4
Total.....		35

SENIOR YEAR

Credit
Hours

CE 25-26	Engineering Materials	4
EE 109	Alternating-Current Machinery	3
EE 125-26	Principles of Electric Power Transmission.....	4
EE 133-34	Alternating-Current Laboratory	4
EE 138	Industrial Electrical Power Applications	2
EE 139	Illumination Engineering	2
EE 140	Electrical Design	3
EE 189-90	Proseminar in Electrical Engineering	2
ME 115	Mechanical Laboratory	2
Elective	Business Administration or Economics	6
Elective	.....	4
Total.....		36

Bachelor of Mechanical Engineering

SOPHOMORE YEAR

Credit
Hours

CE 21	Analytical Mechanics: Statics	2
CE 22	Analytical Mechanics: Dynamics	3
EE 9-10	Elements of Electrical Engineering	6
Math. 20	Integral Calculus	3
ME 7	Machine Drawing	2
ME 8	Mechanism Drawing	2
ME 13-14	Mechanism	4
Phys. Ed.	See page 39 for statement of requirement.	
Phys. 8	General Physics	3
Phys. 55	Physical Measurements	2
Elective	Economics 1-2 or modern language	6
Elective	Mathematics	3
Total.....		36

JUNIOR YEAR		Credit Hours
CE 25-26	Engineering Materials	4
CE 123	Strength of Materials	3
CE 136	Hydraulics	3
CE 140	Materials and Hydraulics Laboratory	2
CE 141	Graphic Statics	3
EE 13-14	Electrical Laboratory	4
ME 111-12	Thermodynamics	6
ME 141-42	Management Problems	4
Speech 21	Public Speaking	3
Elective	.....	3
Total.....		35

SENIOR YEAR		Credit Hours
ME 115-16	Mechanical Laboratory	4
ME 126	Methods of Manufacture	2
ME 127-28	Machine Design	4
ME 129-30	Power Plants	6
ME 131-32	Heating, Ventilating, Air Conditioning, and Refrigeration	4
ME 133	Combustion Engines	2
ME 139	Fluid Dynamics	3
ME 140	Dynamics of Machinery	3
ME 189-90	Proseminar in Mechanical Engineering.....	2
Elective	.....	5
Total.....		35

Bachelor of Science in Engineering

SOPHOMORE YEAR		Credit Hours
CE 21	Analytical Mechanics: Statics	2
CE 22	Analytical Mechanics: Dynamics	3
EE 9-10	Elements of Electrical Engineering	6
Math. 20	Integral Calculus	3
ME 13-14	Mechanism	4
Phys. Ed.	See page 19 for statement of requirement.	
Phys. 8	General Physics	3
Elective	Business Administration or Speech	3
Elective	Economics 1-2 or modern language	6
Elective	Mathematics	3
Elective	Physics	3
Total.....		36

JUNIOR YEAR		Credit Hours
CE 25-26	Engineering Materials	4
CE 123	Strength of Materials	3
CE 136	Hydraulics	3
CE 140	Materials and Hydraulics Laboratory.....	2
EE 13-14	Electrical Laboratory	4
ME 111-12	Thermodynamics	6
Elective	.....	13
Total.....		35

SENIOR YEAR		Credit Hours
Bus. Adm. 101	Business Organization and Combination.....	3
Bus. Adm. 102	Business Management	3
Geol. 21-22	Physical and Historical Geology.....	6
ME 141-42	Management Problems	4
Elective	.....	19
Total.....		35

The purpose of the Bachelor of Science in Engineering curriculum is to allow a student who has demonstrated his ability to do better than passing work to center his attention upon a group of subjects in which he has special interest. Options may be elected in Business Administration, Chemistry, Economics, Mathematics, Physics, or Statistics. The student's choice of courses in his option must be submitted to the Dean's Council for approval *before* the beginning of the junior year. The student must comply with such requirements as to subjects, schedules, and scholarship as the department concerned may prescribe.

Curricula recommended by the several departments in which options may be elected are available in the Office of the Dean of the School of Engineering for the guidance of students in arranging their programs. Variations from these curricula may be made to satisfy the needs of the exceptional individual student. However, any variation must be approved in writing by the department directing the option and by the Dean's Council.

THE PROFESSIONAL DEGREES

The professional degree of Civil Engineer, Electrical Engineer, or Mechanical Engineer may be conferred upon a graduate of the School of Engineering who has demonstrated his professional ability.

REQUIREMENTS FOR THE DEGREES

1. Application may not be made sooner than three years after graduation, and then only if the candidate has had responsible charge of engineering work.

2. A detailed statement of the candidate's experience, references, the degree sought, and the title of the dissertation must be filed with the Dean eight months before the Commencement at which the degree is to be conferred.

Detailed information concerning the preparation of the dissertation may be obtained from the Office of the Dean.

THE SCHOOL OF PHARMACY

THE FACULTY AND STAFF OF INSTRUCTION •

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Charles Watson Bliven, M.S., *Dean of the School of Pharmacy*

Ralph Dale Kennedy, Ph.D., *Professor of Accounting*
Ira Bowers Hansen, Ph.D., *Professor of Zoology*
Lawson Edwin Yocum, Ph.D., *Professor of Botany*
Charles Watson Bliven, M.S., *Professor of Pharmacy*
Alan Thomas Deibert, A.M., *Professor of Romance Languages*
Chester Elwood Leese, Ph.D., *Professor of Physiology*
Calvin Darlington Linton, Ph.D., *Professor of English Literature*
Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
William Paul Briggs, M.S., Sc.D., *Professorial Lecturer in Pharmacy*
Carleton Raymond Treadwell, Ph.D., *Associate Professor of Biochemistry*
George Martin Koehl, A.M., *Associate Professor of Physics*
Robert Corbin Vincent, Ph.D., *Associate Professor of Chemistry*
Jane Gass, M.S., *Assistant Professor of Pharmacology and Pharmacognosy*
Salvatore Joseph Greco, Ph.D., *Assistant Professor of Pharmacy*
John Watson Schermerhorn, Ph.D., *Assistant Professor of Pharmaceutical Chemistry*
Harold Jerome Bobys, A.B., C.P.A., *Lecturer on Pharmaceutical Administration*
Carson Gray Frailey, A.B., LL.B., *Lecturer on Pharmaceutical Law*
David Lucian Rice, B.S. in Phar., *Instructor in Hospital Pharmacy*
Carmel Miriam Snow, B.S. in Phar., *Instructor in Hospital Pharmacy*

SEMINAR LECTURERS

James Johnson Durrett, M.S., Phar.G., M.D., *Professorial Lecturer on Drug Control Problems*
Carson Peter Frailey, Phar.D., Sc.D., *Professorial Lecturer on Industrial Pharmacy*
Frederick John Cullen, Phar.G., M.D., *Professorial Lecturer on Drug Manufacture*
James Albert Horton, LL.B., *Professorial Lecturer on Drug Trade Regulations*

• The President of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

- John Christian Krantz, Jr., Ph.D., *Professorial Lecturer on Pharmaceutical Research*
 Justin Lawrence Powers, Ph.D., *Professorial Lecturer on Official Drug Standards*
 Robert Lee Swain, Phar.D., LL.B., *Professorial Lecturer on Contemporary Pharmacy*
 George Potter Larrick, *Professorial Lecturer on Drug Control*
 Robert Philip Fischelis, B.S., Phar.D., Sc.D., *Professorial Lecturer on Pharmaceutical Organizations*

COMMITTEES •

ADVISORY COMMITTEE

- Irving Alexander Tennyson, *Chairman*
 Howard Bradbury
 William Paul Briggs
 Fred Royce Franzoni
 Augustus Carrier Taylor

THE DEAN'S COUNCIL ‡

- Ira Bowers Hansen
 Robert Corbin Vincent
 John Watson Schermerhorn
 Salvatore Joseph Greco
 Jane Gass

COMMITTEE ON SCHOLARSHIP

- Lawson Edwin Yocum, *Chairman*
 John Watson Schermerhorn
 Robert Corbin Vincent

GENERAL INFORMATION

INTRODUCTORY

In 1867 the foundation for the National College of Pharmacy was laid by the Apothecaries' Association of the District of Columbia. The College was opened in 1872 and continued until 1906, when it became affiliated with The George Washington University.

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education.

The School of Pharmacy is a member of the American Association of Colleges of Pharmacy.

Washington offers many opportunities for the study of pharmacy. Not only are the facilities of government laboratories and libraries open to

• The President of the University and the Dean of the School of Pharmacy are members ex officio of all committees

‡ Elected by the Faculty.

the student, but the School of Pharmacy is located only a few blocks from the American Institute of Pharmacy building, in which has been established a pharmaceutical museum and library, and research laboratories which have brought to Washington the outstanding men of the profession.

REGULATIONS

Students in the School of Pharmacy are subject to and are expected to familiarize themselves with the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES as stated on pages 11-23, and the University regulations stated on pages 36-42.

AMOUNT OF WORK

Normal work for any year is that outlined under the head of "Curriculum Requirements", below. A student who wishes to take more than the normal amount of work may do so only with the permission of the Committee on Scholarship, the members of which are guided in their decision by his scholastic record and the extent to which he is employed. A student on probation is limited in the amount of work he may carry.

ATTENDANCE

Except by special permission of the instructor, credit will not be given for any pharmacy course if absences, including both lecture and laboratory, exceed in number for each term the hours of credit for the term.

Absence consists of being away from a lecture or a laboratory, entering after the lecture or laboratory has begun, or leaving before either is dismissed.

EXAMINATIONS BEFORE STATE BOARDS OF PHARMACY

To be eligible for examination before most state boards of pharmacy the applicant is required to present satisfactory evidence of college graduation and in addition must have had from one to four years of practical experience in a pharmacy where prescriptions are compounded. The student is not encouraged to undertake professional work while attempting a full course of study. A student who maintains a quality-point index of 2.00 or higher, may be granted permission by the Dean to acquire a limited amount of this professional experience by working in a pharmacy while carrying a full schedule. A student who falls below a quality-point index of 2.00 will be required to reduce his academic load, or to limit his professional-experience time to less than twenty-four hours a week.

THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY

Upon the satisfactory completion of the requirements of the School of Pharmacy, the degree of Bachelor of Science in Pharmacy is conferred.

REQUIREMENTS FOR THE DEGREE

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 36 and 37.

In order to graduate, a student must have a general quality-point index of at least 2.00. In addition, he must have a quality-point index of at least 2.50 in all pharmacy courses.

Probation.—A student must maintain a general quality-point index of at least 2.00, or be placed on probation.

A student remains on probation as long as his general quality-point index is below 2.00; however, a student who has an index of between 1.50 and 2.00 will be considered by the Committee on Scholarship, which may retain him on probation or suspend him.

Suspension.—A student who has a general quality-point index below 1.50 will be suspended; however, a student who has an index between 1.40 and 1.50 will be considered by the Committee on Scholarship, which may retain him on probation or suspend him.

A student who is subject to probation for the third time, whether successive or after an interval, will be suspended.

A student suspended for poor scholarship may apply for readmission after an interval of a calendar year. He must then submit evidence to the Dean of the School of Pharmacy that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

The foregoing scholarship rules are applied when a student has undertaken a multiple of nine credit hours.

CURRICULUM

The laboratory method of teaching is used. Recitation classes are held in connection with each course in order to provide systematic drill in the subjects.

The curriculum requirements include at least 138 credit hours. At least two credit hours of the elective courses must consist of laboratory work. The following curriculum leads to the degree of Bachelor of Science in Pharmacy.

Freshman and Sophomore Years

Courses	Did. hrs.	Lab. hrs.	Credit hrs.	Clock hrs.
Courses in the Junior College (see page 57).....	832	752	68	1584

Junior Year: Fall Term

Courses	Did. hrs.	Lab. hrs.	Credit hrs.	Clock hrs.
Chemistry 151.....	48	48	4	96
Pharmacy 105.....	32	....	3	32
Pharmacy 107.....	48	....	3	48
Physiology 115.....	48	....	3	48
Physiology 117.....	....	48	1	48
Elective	80	....	5	80
Total.....	256	96	18	352

Junior Year: Winter Term

Bacteriology 112.....	48	96	4	144
Chemistry 152.....	32	96	4	128
Pharmacy 102.....	32	96	4	128
Pharmacy 106.....	32	....	2	32
Pharmacy 110.....	48	....	3	48
Total.....	192	288	17	480

Senior Year: Fall Term

*Biochemistry 221.....	32	96	4	128
Pharmacy 103.....	32	96	4	128
Pharmacy 111.....	32	48	3	80
Pharmacy 165.....	48	....	3	48
Elective	16	96	3	112
Total.....	160	336	17	496

* With permission of the Dean, Biochemistry 221-22 may be replaced by other courses, for purposes of specialization.

Senior Year: Winter Term

Bacteriology 210.....	32	....	2	32
•Biochemistry 222.....	32	96	4	128
Pharmacy 166.....	32	64	3	96
Pharmacy 176.....	32	....	2	32
Pharmacy 178.....	48	....	3	48
Pharmacy 188.....	32	....	....	32
Pharmacy 192.....	16	48	2	64
Elective.....	32	....	2	32
Total.....	256	208	18	464
Grand total.....	1696	1680	138	3376

THE DEGREE OF MASTER OF SCIENCE IN PHARMACY

Upon the satisfactory completion of the graduate requirements of the School of Pharmacy, the degree of Master of Science in Pharmacy is conferred.

DEFINITION OF THE MASTER'S WORK

The study leading to the degree of Master of Science in Pharmacy is a comprehensive survey of one or more of the fields of knowledge embraced by Pharmacy. It is a continuation of the work of the student's undergraduate major and involves a greater acquaintance with scholarly method.

The student must satisfy certain minimum requirements as to previous preparation, residence, ability to read an approved modern foreign (European) language, and courses taken; but these requirements, while essential, are regarded primarily as qualifying measures. The student's knowledge of his field, as demonstrated by his thesis and by the results of his Master's examination (together with such other examinations involving special skills or techniques as may be required), is the basis upon which the Master's degree is conferred. The foreign language requirement may be waived by faculty action in the instance of students whose field of study at the Master's level may not require such preparation.

REQUIREMENTS FOR THE DEGREE

RESIDENCE

An academic year of residence is required, i.e., completion of a minimum of thirty credit hours of work including the thesis, which is

* With permission of the Dean, Biochemistry 221-22 may be replaced by other courses, for purposes of specialization.

counted as the equivalent of six credit hours of course work. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than twenty-seven weeks. Not more than twelve credit hours (which must be approved in advance by the Dean of the School of Pharmacy) may be taken in another school or division of this University, and such work may not be counted toward both a degree in that school or division and the Master's degree in the School of Pharmacy.

AMOUNT OF WORK

A student whose previous preparation in his chosen field has been adequate may complete his requirements, including the thesis, by a minimum of thirty credit hours; others are required to do additional work. First-group courses may not be credited toward the Master's degree. Pharmacy courses numbered below 200 may be credited toward the Master's degree only when registration for graduate credit has been approved at the beginning of the course by the instructor and the Dean of the School of Pharmacy.

ADMISSION TO CANDIDACY

In addition to admission requirements stated on page 17, the applicant for admission to candidacy for the Master's degree must be approved by the appropriate representative of the department of Pharmacy and by the Dean.

SCHOLARSHIP

A student whose scholarship is considered unsatisfactory may be suspended by the Dean upon recommendation of the staff member under whom the student is working.

THE MASTER'S THESIS

The thesis may be of a research, expository, critical, or creative type.

The main purpose of a Master's thesis is to demonstrate the student's ability to make independent use of the information and training acquired through his other disciplines, and to furnish objective evidence of his constructive powers in his chosen field. Registration for the thesis must be no later than the beginning of the final year of preparation, unless the professor in charge of the thesis permits registration at the beginning of the final term. The choice of the thesis subject must be approved by the professor in charge of the student's field and recorded in the Office of the Registrar by the date announced in the University calendar. Registration for the thesis is ordinarily made on the basis of three credit hours for two successive terms. In exceptional cases, and with the approval of the professor in charge of the thesis, the student may register for the entire six credit hours during a single term. The type-

written thesis in its final form must have the approval of the professor in charge of the student's field and must be presented to the Dean by the student not later than the date announced in the University calendar. Requirements regarding the form of the thesis are stated on page 40, and additional information will be supplied by the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the two-year period the student must register for it again, and pay tuition on the same basis as for a repeated course.

FINAL EXAMINATION

In addition to the course examinations, the candidate must pass a final examination on the thesis and its related fields. This examination may be either written or oral at the discretion of the faculty.

If the thesis is submitted more than three years after the course requirements have been completed, a written examination covering the student's complete program of study will also be required.

THE SCHOOL OF EDUCATION

THE FACULTY AND STAFF OF INSTRUCTION •

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
James Harold Fox, A.M., Ed.D., *Dean of the School of Education*

Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*

Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women*

† Frank Mark Weida, Ph.D., *Professor of Statistics*

Mitchell Dreese, Ph.D., *Professor of Educational Psychology*

James Harold Fox, A.M., Ed.D., *Professor of Education*

Thelma Hunt, Ph.D., M.D., *Professor of Psychology*

Frances Kirkpatrick, A.M., *Professor of Home Economics*

William Henry Myers, A.M., *Professor of Physical Education for Men*

Burnice Herman Jarman, A.M., Ed.D., *Professor of Education*

Chester Elwood Leese, Ph.D., *Professor of Physiology*

William Cullen French, Ph.D., *Professor Emeritus of Education in Residence*

Meredith Chester Wilson, B.S., *Adjunct Professor of Education*

Ruth Coyner Little, Ph.D., *Professorial Lecturer in Education*

§ Ray LaForest Hamon, Ph.D., *Professorial Lecturer in Education*

Charles Edward Bish, A.M., Ed.D., *Professorial Lecturer in Education*

Cecil Wentworth Morgan, Ph.D., *Professorial Lecturer in Physical Education*

Henry Fred Alves, A.M., *Professorial Lecturer in Education*

§ Bernath Eugene Phillips, Ph.D., *Professorial Lecturer in Physical Education*

Helen Bennett Lawrence, A.M., *Associate Professor of Physical Education for Women*

Kathryn Mildred Towne, A.M., *Associate Professor of Home Economics*

Joseph Henry Krupa, M.S., *Associate Professor of Physical Education for Men*

Elizabeth Burtner, A.M., *Associate Professor of Physical Education for Women*

Blake Smith Root, A.M., Ed.D., *Associate Professor of Education*

Ralph Windsor Ruffner, A.M., Ed.D., *Associate Professor of Education*

Dorothy Helene Veon, Ed.D., *Assistant Professor of Secretarial Studies*

• The President of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

† On sabbatical leave winter term 1950-51

§ On leave of absence 1950-51.

Raymond George Hanken, B.S. in P.E., *Assistant Professor of Physical Education for Men*

Marjorie Tate, A.M., *Assistant Professor of Physical Education for Women*

Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Assistant Professor of Physical Education for Men*

Jane Frost Hilder, A.M., *Lecturer in Education, Director of Reading Clinic*

*Madaline Kinter Remmlein, Ph.D., J.D., *Lecturer in Education*

LuVerne Crabtree Walker, A.M., *Lecturer in Education*

Helen Barton Goodwin, A.M., *Lecturer in Education*

Ralph Waldo Foster, A.M., *Lecturer in Physical Education*

Camilla Painter Luecke, A.M., *Lecturer in Education*

Florence Mary Lumsden, A.M., Ed.D., *Lecturer in Education*

William Samuel Rumbough, A.M., Ed.D., *Lecturer in Education*

Cannon Chiles Hearne, A.M., *Lecturer in Education*

Marie Marguerite Neeb, A.M., *Clinician, Reading Clinic*

Wesley Earl Armstrong, M.S., Ed.D., *Consultant in Research*

John Robert Ludington, Ph.D., *Consultant in Research*

COMMITTEES ‡

THE DEAN'S COUNCIL §

1951

Thelma Hunt

Francis Kirkpatrick

1952

Frank Mark Weida

Elizabeth Burtner

1953

Joseph Henry Krupa

Blake Smith Root

COMMITTEE ON ADMISSION AND ADVANCED STANDING

The Dean of the School, *Chairman*

Harold Griffith Sutton

Frances Kirkpatrick

William Henry Myers

Frank Mark Weida

Burnice Herman Jarman

Ruth Harriet Atwell

* On leave of absence 1950-51.

‡ The President of the University and the Dean of the School of Education are members ex officio of all committees.

§ Elected by the Faculty.

COMMITTEE ON SCHOLARSHIP

Blake Smith Root, *Chairman*

William Henry Myers

Helen Bennett Lawrence

Kathryn Mildred Towne

GENERAL INFORMATION

INTRODUCTORY

It is the purpose of the School of Education to prepare teachers, supervisors, and administrators for the higher ranges of educational service and to offer opportunities to teachers of experience to extend their education. The School includes the departments of Education, Physical Education, and Home Economics. It offers both graduate and undergraduate work. Other departments of the University provide general education and subject-matter courses needed for a well-balanced program of teacher education.

The schedule of courses is arranged to meet the convenience of both full-time and part-time students. By attending evening, Saturday, and summer classes, teachers in the schools of Washington and vicinity may complete all the requirements for a degree without giving up their positions.

To help children and adults with reading difficulties, the School of Education operates a reading clinic for diagnosis and treatment.

REGULATIONS

Students in the School of Education are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 11-23, and the University regulations stated on pages 36-42.

AMOUNT OF WORK

A normal program of work for an undergraduate student is fifteen credit hours. A student with a quality-point index of 3.00 or higher may, with the Dean's permission, take eighteen hours. More than eighteen hours may not be taken except by special permission of the Committee on Scholarship.

For an employed student nine credit hours constitute a normal program. A student with a quality-point index of 3.00 or higher for the preceding term may be permitted by the Dean to take twelve or thirteen credit hours.

For a graduate student twelve credit hours, exclusive of the thesis,

constitute a normal program. An employed student may not take more than nine credit hours.

THE BACHELOR'S DEGREES

Upon the satisfactory completion of the undergraduate requirements of the School of Education, the degree of Bachelor of Arts in Education, Bachelor of Science in Home Economics, or Bachelor of Science in Physical Education is conferred.

The program of work of each student must be approved by a Faculty adviser. Since each student's program of work will be defined by his particular needs, it is important that the student have a clear conception of his major interest in education, and also that he be familiar with the teaching-certificate requirements in the locality in which he expects to teach.

REQUIREMENTS FOR THE DEGREES

To be recommended for a degree a student must satisfy the admission, residence, scholarship, and curriculum requirements.

RESIDENCE

For full details concerning continuous registration, see page 40.

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 36 and 37.

In order to graduate, a student must have a quality-point index of at least 2.00.

Probation.—An undergraduate student who fails to maintain a quality-point index of at least 2.00 will be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Committee on Scholarship.

Suspension.—An undergraduate student who fails to pass in half or more than half of his work, based on a minimum of sixteen credit hours, will be suspended.

A student who has been suspended for poor scholarship may within ten days appeal his case to the Committee on Scholarship through the Dean. If the case appears to be remediable and the student appears likely to improve in his scholarship thereafter, the Committee may readmit him on probation. A student who has been denied readmission on probation may petition the Committee on Scholarship through the Dean for readmission after the lapse of a calendar year. A student who has been suspended twice will not be readmitted.

CURRICULUM REQUIREMENTS

In any of the following curricula at least thirty credit hours must consist of courses numbered above 100.

Bachelor of Arts in Education

Programs leading to the degree of Bachelor of Arts in Education have three main objectives: (1) provision of general educational backgrounds, (2) a functional command of ideas, concepts, knowledges, and skills in one or more teaching fields, and (3) a mastery of basic professional information and skills adequate for a beginning teacher. Since the contents of teaching fields differ in scope and complexity, some programs are longer than others in terms of credit hours. None require less than 126 credit hours of satisfactory work, exclusive of required Physical Education. Normally, 60 credit hours of the total requirement are completed in the Junior College of the University or in an equivalent institution elsewhere. (See "Education", pages 57 and 58.)

The general educational backgrounds needed by prospective teachers are obtained through: (1) pre-college education, (2) college courses, (3) work experience, (4) leadership activities, (5) participation in student campus activities, and (6) utilization of off-campus cultural opportunities.

Teaching-field requirements include satisfactory completion of prescribed academic courses in one or more fields, a satisfactory score on the special field examination of the National Teacher Examinations, and satisfactory completion of the prescribed special methods courses. Programs of study are available in the following fields: art, biology, business education, chemistry, elementary education,* English, French, geography, German, history, mathematics, physics, social studies, Spanish, and speech.

The basic professional information and skills needed by beginning teachers are provided through four one-year courses, two in each of the junior and senior years. Lectures and class discussions are closely coordinated with field work. Instruction is differentiated to meet the needs of those preparing to teach on the various levels—elementary school, junior high school, senior high school, and adult.

PROFESSIONAL COURSES

	Credit Hours
Education 109-10: Learning and Teaching.....	6
Education 121-22: Society and the School.....	6
Education 131: Common Teaching Skills.....	3
Education 133-34: Observation and Practice Teaching.....	6
Education 136 to 150: Special Methods.....	2-6
Total.....	23-27

* Only for those who have graduated from a two- or three-year course in a Normal School.

Additional information concerning these programs may be obtained by writing to the Dean of the School of Education.

Bachelor of Science in Home Economics

The curriculum leading to this degree is designed to prepare young women for the important responsibility of home-making. The program can be adapted, however, to meet special requirements in nutrition, dietetics, clothing, and other related fields. Each student must plan her work with the assistance of a Faculty adviser in the Department of Home Economics.

GENERAL HOME-MAKING

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Home Economics 51.....	3		Home Economics 152.....	3	
Home Economics 72.....	3		Home Economics 171.....	3	
Home Economics 102.....	3		Home Economics 181.....	3	
Home Economics 123.....	3		Home Economics 192.....	3	
Physiology 115.....	3		Home Economics 197-98.....	6	
Electives.....	15		Psychology 29.....	3	
			Electives.....	9	
Total.....	30		Total.....	30	

Bachelor of Science in Physical Education for Men

There are three curricula leading to this degree. The Single-Major and Subject-Certification Teacher's Course is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Single-Major Teacher's Course prepares for the teaching of physical education in the larger schools. The Physical Education and Recreation Course has been planned for those who wish to be prepared to direct programs of recreation in addition to the teaching of physical education.

The minimum requirements for this degree are sixty-six credit hours, distributed as follows:

SINGLE-MAJOR AND SUBJECT-CERTIFICATION TEACHER'S COURSE

The minimum requirements for this degree are twenty-one credit hours in education, twenty-three credit hours in physical education, nineteen credit hours in an academic teaching field, and three credit hours in physiology, distributed as follows:

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Education 109-10.....	6		Education 131.....	3	
Education 121-22.....	6		Education 133-34.....	6	
Physical Education 105.....	3		Physical Education 103.....	3	
Physical Education 113-14.....	4		Physical Education 115-16.....	4	
Physical Education 122.....	3		Physical Education 131.....	3	
Physiology 115.....	3		Physical Education 138.....	3	
Academic teaching field.....	8		Academic teaching field.....	11	
Total.....	33		Total.....	33	

SINGLE-MAJOR TEACHER'S COURSE

The minimum requirements for this degree are twenty-one credit hours in education, thirty credit hours in physical education, three credit hours in physiology, and twelve credit hours of electives:

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Education 109-10	.....	6	Education 131	.....	3
Education 121-22	.....	6	Education 133-34	.....	6
Physical Education 109-10	.....	4	Physical Education 103	.....	3
Physical Education 113-14	.....	4	Physical Education 105	.....	3
Physical Education 115-16	.....	4	Physical Education 131	.....	3
Physical Education 121	.....	3	Physical Education 138	.....	3
Physical Education 122	.....	3	Elective	.....	12
Physiology 115	.....	3			
Total	.....	33	Total	.....	33

PHYSICAL EDUCATION AND RECREATION COURSE

The minimum requirements for this course are sixty-six credit hours, distributed as follows:

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Education 109	.....	3	Education 131	.....	3
Education 121-22	.....	6	Education 133-34	.....	6
Physical Education 48	.....	2	Physical Education 103	.....	3
Physical Education 109-10	.....	4	Physical Education 122	.....	3
Physical Education 113-14	.....	4	Physical Education 131	.....	3
Physical Education 132	.....	1	Physical Education 138	.....	3
Physical Education 151-52	.....	6	Physical Education 153-54	.....	6
Electives	.....	7	Physical Education 161	.....	3
Total	.....	33	Physical Education 162	.....	3
			Total	.....	33

Bachelor of Science in Physical Education for Women

There are three curricula leading to this degree. The Dual-Major Teacher's Course is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Single Major Teacher's Course prepares for the teaching of physical education in the larger schools. Within this course there is opportunity for specialization in dance, sports, or correctives. The Physical Education and Recreation Course has been planned for those who wish to be prepared to direct programs of recreation in addition to the teaching of physical education.

The minimum requirements for this degree are sixty-six credit hours, distributed as follows:

DUAL OR SINGLE MAJOR TEACHER'S COURSE

The student desiring to prepare herself to teach another subject in addition to Physical Education for Women may do so by choosing her elective hours from one subject-matter field with the advice of the Dean

of the School of Education. Relevant work completed in the Junior College may be counted in this subject-matter field.

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Education 109-10	.....	6	Education 121-22	.....	6
Physical Education 51-52	.....	4	Education 133-34	.....	6
Physical Education 58	.....	2	Physical Education 103	.....	3
Physical Education 105-6	.....	6	Physical Education 113-14	.....	4
Physical Education 115-16	.....	4	Physical Education 131	.....	3
Physical Education 121	.....	3	Physical Education 138	.....	3
Physical Education 122	.....	3	Academic teaching field or elective	.....	9
Physical Education 132	.....	1			
Physiology 115	.....	3			
Total		32	Total		34

PHYSICAL EDUCATION AND RECREATION COURSE

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Education 121-22	.....	6	Education 133-34	.....	6
Physical Education 48	.....	2	Physical Education 103	.....	3
Physical Education 51-52	.....	4	Physical Education 113-14	.....	4
Physical Education 58	.....	2	Physical Education 138	.....	3
Physical Education 105-6	.....	6	Physical Education 153-54	.....	6
Physical Education 109-10	.....	4	Physical Education 161	.....	3
Physical Education 115-16	.....	4	Physical Education 162	.....	3
Physical Education 132	.....	1	Elective	.....	5
Physical Education 151-52	.....	4			
Total		33	Total		33

THE DEGREE OF MASTER OF ARTS IN EDUCATION

Upon the satisfactory completion of the graduate requirements of the School of Education, the degree of Master of Arts in Education is conferred. This is a professional degree, designed to prepare the student for some particular type of educational service. The program of studies leading to the degree is selected by the candidate and his adviser from the various related departments of the University to give the student an adequate background in his chosen vocational field. For the prospective high school or junior high school teacher this will ordinarily include study in the subject which he is planning to teach as well as in the field of education.

In accordance with the foregoing general pattern of work, graduate programs of study are available in early childhood education, elementary education in the intermediate grades, elementary school administration, guidance, agricultural education, adult education, physical education, and the various teaching fields in secondary education. Programs of work for teachers-in-service are differentiated from those for students without

teaching experience. Additional information concerning these programs may be obtained by writing to the Dean.

ADMISSION TO CANDIDACY

In addition to admission requirements stated on pages 17 and 18, the applicant for admission to candidacy for the Master's degree must (1) have a general undergraduate quality-point index of at least 2.50, (2) have demonstrated a genuine interest in teaching, and (3) be in possession of personality traits that give promise of better-than-average success as a teacher. Those desiring to prepare for positions in guidance or administration must have had at least two years of successful teaching experience. Candidates who have had no professional courses must satisfactorily complete the required undergraduate professional courses, including Observation and Practice Teaching, in addition to graduate course requirements.

ADVANCED STANDING

Graduate work completed in other accredited institutions of learning may be credited toward the Master's degree, but a minimum of thirty credit hours must be completed at The George Washington University as a matriculated candidate in the School of Education.

Advanced courses completed in excess of the requirements for the Bachelor's degree in this University may be credited toward the Master's degree to the extent of twelve credit hours, provided the work fits in with the student's plan of specialization and is approved in writing by the Dean before being undertaken.

In determining advanced standing at the time of admission or readmission to Master's candidacy at this University, graduate work completed more than three years previously is not counted.

REQUIREMENTS FOR THE DEGREE

PLANS OF STUDY

Two plans of study lead to the degree of Master of Arts. *Plan 1* requires a minimum of thirty hours of graduate credit, including a thesis carrying six hours of graduate credit. *Plan 2* requires a minimum of thirty-three hours of graduate credit, including a course in *Educational Research Methods and Procedures* carrying three hours of graduate credit.

SELECTION OF COURSES

Programs of study under *Plan 1* must include a minimum of twelve credit hours from third group courses in addition to the thesis. Under *Plan 2* a minimum of eighteen credit hours, in addition to the course in *Educational Research Methods and Procedures*, must be from third group courses.

Programs of study must include a minimum of twelve credit hours from courses offered in the Department of Education.

When programs of study include additional academic preparation in one or more teaching fields, undergraduate and graduate courses combined must be at least equivalent to the undergraduate requirements of the Bachelor of Arts degree in the teaching field concerned.

THE THESIS

The thesis required under *Plan 1* must conform to standards prescribed by the Committee on Theses. A statement of these standards may be obtained at the Office of the Dean.

The thesis subject must be approved in writing by the candidate's adviser and recorded in the Office of the Registrar by the date announced in the University calendar. One typewritten original and three legible and complete carbon copies of the thesis in its final form must be presented to the Dean by the candidate not later than the date announced in the University calendar. Requirements regarding the form of the thesis are stated on page 40, and additional information will be supplied by the Dean.

Payment of tuition for the thesis will entitle the candidate, during the academic year of registration, to the advice and direction of the member of the Faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the two-year period, it must be registered for again, and tuition paid on the same basis as for a repeated course.

COMPREHENSIVE EXAMINATION

In addition to the course examinations, the candidate must pass a professional comprehensive examination which shall take into account his area of specialization.

FIVE-YEAR PROGRAM

A candidate entering the School of Education from the Junior College (or with equivalent preparation) may choose a three-year program leading to the degrees of Bachelor of Arts and Master of Arts in Education to be conferred simultaneously. The first year of this combined program will be devoted to teaching-field preparation; the work of the second year will include the Bachelor of Arts junior-year professional courses and a maximum of eighteen credit hours of graduate courses; that of the third and final year, senior-year undergraduate professional courses and the remaining graduate courses needed for the Master's degree. Observation and Practice Teaching to be elected in the third year may not be taken for graduate credit. A quality-point index of at least 2.50 must be attained before beginning the work of the senior

year and the program must meet all the requirements of the degrees of Bachelor of Arts and the Master of Arts in Education.

THE DEGREE OF DOCTOR OF EDUCATION

The requirements for the degree of Doctor of Education cannot be stated in credit hours, but they consist in general of at least two full years of work beyond the degree of Master of Arts in Education or the equivalent. The programs of study are designed to prepare students for administrative or supervisory positions, the teaching of education in normal schools or colleges, the teaching of an academic subject in schools or colleges, or for specialized types of educational service. The work is given a practical rather than a theoretical bent, and emphasizes the mastery and application of subject matter, both in the study requirements and in the dissertation. Special emphasis is placed upon the professional success of the candidate.

The candidate's program of study largely depends upon his previous educational background and his professional objective. Opportunities are provided for study leading to the following professional objectives: school superintendent, secondary school principal, supervisor, director of guidance, director of curriculum development, professor of education, and specialist in educational research.

QUALIFICATIONS OF THE APPLICANT

The candidate for the degree of Doctor of Education must have completed (1) graduate work in fields prerequisite to his objective, equivalent to that required for the degree of Master of Arts in Education in The George Washington University, and (2) at least three years of successful educational experience.

ADMISSION TO CANDIDACY

To be admitted to candidacy for the degree the applicant must be accepted by the Faculty of the School of Education on the basis of an examination conducted by a committee appointed by the Dean. This examination will usually include the following: (1) a written examination involving problems related to the applicant's background; (2) a scholastic-aptitude test; (3) an oral examination.

CONSULTATIVE COMMITTEE

If the applicant is accepted as a candidate, his consultative committee will counsel the candidate and guide his work.

The consultative committee, in cooperation with the candidate, will (1) determine the candidate's fields of study, in each of which the candidate must pass a written examination at least eight months before he

presents himself for the degree; (2) formulate a list of course requirements and of readings that will assist him in preparing for these examinations; and (3) designate the tools of investigation that will be needed by the candidate in the prosecution of his study. These tools may include one or more foreign languages, statistical methods, historical criticism, or any others considered essential by the committee. An examination in the tools designated must be passed by the candidate before he takes his comprehensive examination.

THE DISSERTATION

When the candidate has satisfied the requirements of his consultative committee, the committee is dissolved. A member of the faculty, in whose field the topic of the dissertation falls, is then appointed to serve as the candidate's adviser on his dissertation and in his field of specialization, and to recommend him to the Dean for the final oral examination when, in his judgment, the candidate's dissertation is acceptable.

Not later than the date specified in the University calendar the candidate shall submit to the Dean of the School of Education four copies of his dissertation—one typewritten original and three legible and complete carbon copies, on official thesis paper—and also a typewritten summary of the dissertation consisting of not more than 2,500 words. Requirements regarding the form of the dissertation are stated on page 40, and additional information will be supplied by the Dean.

The successful candidate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

THE FINAL EXAMINATION

At least three weeks before the degree is to be conferred the candidate must pass an oral examination on his dissertation and on his field of specialization before a committee of the Faculty appointed by the Dean, supplemented by two experts from outside the University appointed by the President. This examination is open to the public and all are privileged to question the candidate. The Dean, or a member of the Faculty designated by him, will preside at this examination.

THE SCHOOL OF GOVERNMENT

THE FACULTY AND STAFF OF INSTRUCTION*

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Arthur Edward Burns, Ph.D., *Dean of the School of Government*

‡Richard Norman Owens, Ph.D., C.P.A., *Professor of Business Administration*

Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*

Warren Reed West, Ph.D., *Professor of Political Science*

§Frank Mark Weida, Ph.D., *Professor of Statistics*

Harold Griffith Sutton, M.S., *Professor of Finance*

Mitchell Dreese, Ph.D., *Professor of Educational Psychology*

Ralph Dale Kennedy, Ph.D., *Professor of Accounting*

Wood Gray, Ph.D., *Professor of American History*

Thelma Hunt, Ph.D., M.D., *Professor of Psychology*

Arthur Edward Burns, Ph.D., *Professor of Economics*

John Albert Tillema, Ph.D., LL.M., S.J.D., *Professor of Political Science*

John Withrow Brewer, Ph.D., *Professor of International Law*

Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*

§Donald Stevenson Watson, Ph.D., *Professor of Economics*

Myron Law Koenig, Ph.D., *Professor of American History*

James Christopher Corliss, A.M., *Adjunct Professor of Inter-American Economics*

‡Henry Furness Hubbard, Ph.D., *Adjunct Professor of Psychology*

William Crane Johnstone, Jr., Ph.D., *Professorial Lecturer in Political Science*

Gerhard Colm, Dr. rer. pol., *Professorial Lecturer in Economics*

Orton Wells Boyd, A.M., C.P.A., *Professorial Lecturer in Accounting*

Arlin Rex Johnson, Ph.D., *Professorial Lecturer on Marketing*

H. F. Arthur Schoenfeld, A.M., *Professorial Lecturer on European Diplomatic History*

Ralph Aubrey Young, M.B.A., Ph.D., *Professorial Lecturer in Economics*

Karl Ernest Stromsem, Ph.D., *Professorial Lecturer on Public Administration*

Edward Campion Acheson, Ph.D., *Associate Professor of Finance*

* The President of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, and Assistant Professors constitute the Faculty.

‡ On leave of absence 1950-51.

§ On sabbatical leave winter term 1950-51.

Everett Herschel Johnson, Ph.D., *Associate Professor of Statistics*
 Robert Dale Campbell, Ph.D., *Associate Professor of Geography*
 Wolfgang Herbert Kraus, Dr.Jur., S.J.D., *Associate Professor of Political Science*
 Roderic Hollett Davison, Ph.D., *Associate Professor of European History*
 Joe Lee Jessup, M.B.A., *Associate Professor of Business Administration*
 Paul Edward Hanchett, Ph.D., *Assistant Professor of Economics*
 Albert Raymond Miller, Jr., A.M., *Assistant Professor of Economics*
 James Norman Mosel, A.M., *Assistant Professor of Psychology*
 Merle Welshans, A.M., *Assistant Professor of Business Administration*
 Solomon Kullback, Ph.D., *Lecturer in Statistics*
 Allen Dailey Manvel, A.B., *Lecturer on Public Administration*
 Fred Latimer Hadsel, Ph.D., *Lecturer in Political Science*
 William George Torpey, Ph.D., *Lecturer on Public Administration*
 Charles Bigelow Stauffacher, A.M., *Lecturer on Public Administration*
 Charles Lawrence Marks, A.M., *Instructor in Statistics*
 Jonathan Dayton Stoddart, A.M., *Instructor in Political Science*
 John Leiper Freeman, A.M., *Instructor in Political Science*
 Frederick Charles Kurtz, M.B.A., *Instructor in Accounting*
 John William Skinner, A.M., *Instructor in Business Administration*

COMMITTEES *

THE DEAN'S COUNCIL ‡

1951

John Albert Tillema
 John Withrow Brewer

1952

Thelma Hunt
 Ralph Dale Kennedy

1953

Everett Herschel Johnson
 Roderic Hollett Davison

COMMITTEE ON ADMISSION AND ADVANCED STANDING

The Dean of the School, *Chairman*
 Harold Griffith Sutton, *Secretary*

Ralph Dale Kennedy

Donald Stevenson Watson

Frank Mark Weida

GENERAL INFORMATION

INTRODUCTORY

The George Washington University has provided training in both foreign service and governmental theory and administration throughout

* The President of the University and the Dean of the School of Government are members ex officio of all committees.
 ‡ Elected by the Faculty.

its history. This was one of its purposes when chartered in 1821. The School of Government was established in 1928 to bring together in various undergraduate and graduate curricula the work offered in foreign service and much of the other academic work in the theory and administration of government.

It is the purpose of the School to give the student an understanding of his responsibilities under the Constitution of the United States in the conduct of public office—domestic and foreign. This can be accomplished not through any single course but through a curriculum which correlates social, economic, political, historical, business, and psychological studies.

The program embraces both graduate and undergraduate work. Curricula leading to the Bachelor of Arts degree are offered in Foreign Affairs, Accounting, Business Administration, and Statistics. A graduate curriculum in each of these subjects is also offered. In addition to the fields mentioned above, graduate work is available in Government and Economic Policy, Public Administration, Personnel Administration, and Vocational Counseling.

The Foreign Affairs program is broad, covering international political relations, international trade and finance, and regional studies. Its purpose is to equip students, by providing general background and specialized work, for careers in the field of American foreign relations. The diplomatic service of the United States, the several agencies of government with responsibilities in the international field, the international organizations, and American enterprise abroad offer opportunities in this field.

Governmental service requires special training and background in many other subjects, including economic research, statistical investigation, accounting, administrative management, and personnel administration. The academic background for such work is offered in the various curricula of the School and is described below.

REGULATIONS

Students in the School of Government are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 11-23, and the University regulations stated on pages 36-42.

AMOUNT OF WORK

A full-time student not on probation may take ordinarily not more than seventeen credit hours. A student employed more than twenty-four hours a week, who is not on probation, may take not more than ten credit hours.

A full-time undergraduate student whose quality-point index is 3.50

or higher may take not more than nineteen credit hours. An undergraduate student employed more than twenty-four hours a week, whose quality-point index is 3.50 or higher, may take up to twelve credit hours.

Exception to these rules will require the approval of the Dean.

ATTENDANCE

The student is held responsible for all the work of the courses in which he is registered, and all absences must be excused by the instructor in charge before provision is made for him to make up the work missed.

CLASSIFICATION OF STUDENTS

A student who holds an Associate in Arts degree from the Junior College or the equivalent from another accredited institution, and who has registered his choice of one of the prescribed curricula at the Office of the Registrar, is classed as a *junior*. A student who has completed thirty credit hours in the School of Government is classed as a *senior*. A student who has satisfactorily completed the work for the Bachelor's degree, and who has registered his choice of one of the prescribed fields of study at the Office of the Registrar, is classed as a *master in course*.

INDEPENDENT STUDY PLAN

Under the independent study plan a student of demonstrated capacity, with special interest in the subject matter of a course, may be permitted to undertake independent study under the personal direction of an instructor, in accordance with the rules of the division in which the subject falls. Credit under this plan is limited to the specific course-credits as designated in the list of courses of instruction in this CATALOGUE.

THE DEGREE OF BACHELOR OF ARTS IN GOVERNMENT

Upon the satisfactory completion of the undergraduate requirements of the School of Government, the degree of Bachelor of Arts in Government, with a designation of the major field of study, is conferred. The major fields are Foreign Affairs, Accounting, Business Administration, and Statistics.

Students who have a special need for integrating courses from several departments or from more than one major field may request approval, by a faculty committee, of a special major program. The same rules and regulations will apply as in the regularly offered majors.

Requirements for the undergraduate major in Economics and Public Administration are stated under the departments of Economics and Political Science, respectively.

REQUIREMENTS FOR THE DEGREE SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 36 and 37.

In order to graduate, a student must have the following: (1) a quality-point index in all of his work of at least 2.00, and (2) a quality-point index of at least 2.50 in his major. The major includes the required courses and courses taken in the group options.

Probation.—A student must maintain a quality-point index of at least 2.00, or be placed on probation, where he will remain as long as his quality-point index is below 2.00.

Suspension.—A student who has a quality-point index below 1.00 or who is placed on probation for a third term, whether successive or after an interval, will be suspended.

For the purpose of these rules, the summer sessions are considered a term.

A student suspended for poor scholarship may apply for readmission after an interval of a calendar year. He must then submit evidence to the Committee on Admission and Advanced Standing that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

A student with a limited schedule is affected by the foregoing scholarship rules only when he has undertaken fifteen credit hours.

CURRICULUM REQUIREMENTS

For recommendation for graduation the School of Government requires, in addition to the appropriate Junior College work (see page 18 and curricula on pages 59 and 60), a minimum of sixty credit hours during the junior and senior college years, as set forth in one of the following curricula:

Foreign Affairs		Credit Hours
Econ. 181-82...	International Economics	6
Hist. 150	European Diplomatic History Since 1854	6
or Pol. Sc. 171.	International Politics	3
Hist. 181-82...	Diplomatic History of the United States	6
Pol. Sc. 172...	International Organization: the United Nations	3
Pol. Sc. 181-82.	International Law	6
Language	Advanced Composition and Conversation	6
Geog. ....	.....	3
Group Option...	(To be selected from one of the following groups)	18
Electives	(To be selected in consultation with adviser)	9
Total.....		60

All foreign affairs majors must complete the *required* courses listed above. The group option provides specialization in international politics, or international economics, or a geographic region, depending upon the student's interest. Normally no more than six credit hours may be taken in an option other than the one selected. Consent of the adviser must be obtained for such modification of the option selected.

Group I—International Political Relations

This group option (18 credit hours as noted in list above) is composed of courses in the departments of Political Science, History, and Geography which are related to the study of American diplomatic relations. The selection of courses must be made upon consultation with the adviser.

Group II—International Economic Relations

This group option (18 credit hours as noted in list above) is composed of courses offered primarily by the departments of Economics and Business Administration which are related to the study of American economic, financial, and business relationships with foreign countries. The selection of courses must be made upon consultation with the adviser.

Group III—Area or Regional Studies

This group option (18 credit hours as noted in list above) may be selected from courses offered in the departments of Economics, History, Political Science, and Geography, dealing with a geographic region such as Europe, Latin America, or the Pacific Area. This selection must be approved by the adviser.

Business Administration		Credit Hours
Bus. Adm. 101.....	Business Organization and Combination.....	3
Bus. Adm. 102.....	Business Management	3
Bus. Adm. 105.....	Personnel Management in Industry.....	3
Bus. Adm. 131.....	Business Finance	3
Bus. Adm. 141.....	Principles of Marketing.....	3
Bus. Adm. 198.....	Problems in Business Management.....	3
Econ. 121.....	Money and Banking.....	3
Pol. Sc. 127-28.....	Commercial Law	6
Acct. 102.....	Business Budgeting	3
		30
Group Option (to be selected from one of the following groups).....		15
Electives (to be selected in consultation with the adviser).....		15
Total.....		60

All Business Administration majors must complete the *required* courses listed above. The group options shown below provide specialization in several aspects of business. Selection of the option and the courses (15 credit hours) to be taken in it must be made upon consultation with the adviser. Normally no more than 6 credit hours may be taken in an option other than the one selected. Consent of the adviser must be obtained if the student wishes such modification of his option group.

Group I—General Business

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, Economics, and Statistics.

Group II—Personnel Management

This group option is made up of selected courses offered by the departments of Business Administration, Economics, Psychology, Speech, and Statistics.

Group III—Finance

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, Economics, Political Science, and Statistics.

Group IV—Marketing

This group option is made up of selected courses offered by the departments of Business Administration, Economics, Geography, and Statistics.

Group V—Accounting

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, and Economics.

Group VI—Economics

This group option is made up of selected courses offered by the departments of Economics and Business Administration.

Group VII—Statistics

This group option is made up of selected courses offered by the Department of Statistics.

Foreign Commerce.—Business Administration majors who wish to specialize in foreign commerce may request a modification of the above requirements. The modified major excludes some of the above required courses and adds others, such as a third year of foreign language, foreign markets, exporting and importing, economic geography, and other courses relating to overseas trade. Each program must be approved by the adviser.

Accounting		Credit Hours
Acct. 137.....	Financial Statement Analysis.....	3
Acct. 147.....	Cost Accounting	3
Acct. 151-52.....	Intermediate Accounting	6
Acct. 161.....	Auditing	3
Bus. Adm. 102.....	Business Management	3
Bus. Adm. 131.....	Business Finance	3
Econ. 121.....	Money and Banking.....	3
Pol. Sc. 127-28.....	Commercial Law	6
Group Option (to be selected from one of the following groups).....		30
Electives (to be selected in consultation with the adviser).....		15
Total.....		60

All Accounting majors must complete the *required* courses listed above. The group options shown below provide specialization in public accounting, commercial and industrial accounting, and governmental accounting and budgeting. Selection of the option and the courses (15 credit hours) to be taken in it must be made upon consultation with the adviser.

Group I—Public Accounting

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, and Political Science.

Group II—Commercial and Industrial Accounting

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, Economics, and Statistics.

Group III—Governmental Accounting and Budgeting

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, Political Science and Economics.

	Credit Hours
Statistics	
Stat. 115-16.... Principles of Statistical Methods.....	6
Stat. 117..... Analysis of Variance.....	3
Stat. 118..... Correlation and the Chi-Square Test.....	3
Stat. 155-56.... Mathematical Probability	6
Stat. 157-58.... Mathematical Statistics	6
Stat. 157-58.... Mathematical Statistics	24
Group Option... (To be selected from one of the following groups).....	12
Electives (To be selected in consultation with adviser).....	12
Total.....	60

Group I—Economic and Business

Courses in this group are to be selected by students specializing in economic and business statistics upon consultation with the adviser. These courses are offered by the departments of Business Administration, Economics, and Statistics.

Group II—Education and Psychology

Courses in this group are to be selected by students specializing in educational and psychological statistics upon consultation with the adviser. These courses are offered by the departments of Psychology and Statistics. •

Group III—Mathematics and the Biological and Physical Sciences

Courses in this group are to be selected by students specializing in mathematical statistics and statistical applications in the biological and physical science fields. Selections must be made upon consultation with the adviser.

EXAMINATIONS FOR WAIVING CURRICULUM REQUIREMENTS

A student desiring to omit a required course may take such examination as the department prescribes, and, on passing satisfactorily, he may be relieved of the curriculum requirement in that subject and may qualify for registration in an advanced course. Passing of this examination does not entitle the student to any hours of credit toward the degree.

A student desiring to take such examinations should make the request of the Dean and pay the required fee.

The candidate for the Master's degree who is deficient in undergraduate preparation may take a comprehensive examination on his undergraduate major field. Passing of this examination entitles the student to admission without taking specific courses to make up his deficiencies.

In courses taken to satisfy undergraduate deficiencies, the student must maintain at least a 3.00 average to be eligible for admission to graduate study.

THE DEGREE OF MASTER OF ARTS IN GOVERNMENT

Upon the satisfactory completion of the graduate requirements of the School of Government, the degree of Master of Arts in Government, with a designation of the major field of study, is conferred. The major fields are Foreign Affairs, Accounting, Business Administration, Business and Economic Statistics, Government and Economic Policy, Public Administration, Personnel Administration, and Vocational Counseling.

Students who have a special need for integrating courses from two or more of the major fields of concentration for the Master's degree may request approval, by a faculty committee, of a special major program. All rules and regulations for the Master's degree will apply to such special programs.

A 3.00 average in the undergraduate major is normally required for admission to graduate study.

ADMISSION TO CANDIDACY

A student is formally recognized as a candidate for the Master's degree only when his application for candidacy has been approved by the Dean. Application is made on a form obtainable at the Office of the Registrar.

Candidates for the Master of Arts degree in Foreign Affairs or in Government and Economic Policy must show a reading knowledge (certified by the appropriate language department) of at least one modern foreign language, to be approved by the Dean. Such examination should be taken before the student begins the second 15 hours of his work. Examinations in modern foreign languages will be given on the dates specified in the University calendar.

REQUIREMENTS FOR THE DEGREE

A minimum of thirty credit hours of work, as outlined in the curricula on pages 143-46, must be completed successfully. Variations from these curricula require the permission of the Dean.

No part of the minimum requirement may be taken in any other institution.

A second-group course (numbered 101-200), taken either in the undergraduate or graduate years, may be counted toward the Master's degree only when registration for advanced credit has been approved at the beginning of the course by the Dean and by the officer of instruction, and provided that the student has done such extra work in the course as may be prescribed by the instructor.

Work completed more than three years prior to registration for the Master's degree will be counted only if the candidate successfully passes an examination on the subject matter of the work offered for credit.

In addition to the course examinations, the candidate must pass a comprehensive written examination in his major field. An oral examination on his thesis may also be required.

No work counted toward a Bachelor's degree may be counted toward a Master's degree.

A student who expects to continue his studies for the degree of Doctor of Philosophy after receiving the Master's degree will be assisted to plan his program so that he can qualify for admission to candidacy for the Doctorate.

RESIDENCE

No credit is granted for work done in absentia, i.e., without formal instruction, except for the thesis, which may be completed in absentia with the permission of the department concerned.

SCHOLARSHIP

A student whose scholarship is unsatisfactory may be suspended by the Dean. Regarding the system of grading, see pages 36 and 37.

CURRICULUM REQUIREMENTS

A normal program includes a minimum of twenty-four credit hours of course work and the thesis (six credit hours), to be selected from the courses listed under the chosen major field, and such other courses as may be necessary. Programs should be prepared in advance upon consultation with the adviser and submitted to the Dean on the appropriate form; if the program is not completed at the time of registration this must be attended to not later than one month following registration.

Foreign Affairs

Prerequisite: an undergraduate major in foreign affairs, economics, or political science, depending upon the field of specialization. Any course deficiency in foreign affairs must be made up.

The Master of Arts program in Foreign Affairs is offered in three fields of

specialization: International Economics, International Politics, and Regional Studies.

International Economics.—Graduate courses in economics (numbered 200 and over) in the field of international trade, the balance of payments, international financial policies, and international economic policies form the principal part of this specialization. Graduate courses in economic theory are recommended. Other courses may be included with the consent of the adviser.

International Political Relations.—Graduate courses in political science and history (numbered 200 and over), in international law, international politics, international organization, diplomatic history, and American foreign policy, comprise the principal requirements for this specialization. Related courses may be added with the consent of the adviser.

Regional Studies.—Graduate courses in economics, political science, history, and geography (numbered 200 and over) dealing with a geographic region, such as Latin America, Europe, or the Pacific Area, comprise the principal requirements. Other courses of broader scope in economics, history, and political science are recommended as part of the program. The adviser in all cases must approve such selections.

The listing of graduate courses for these programs is given in the departmental offerings for Economics, History, Political Science, and Geography.

Accounting

Prerequisite: an undergraduate major in accounting or the equivalent. The Master of Arts program in Accounting requires the following courses:

Acct. 262.....	Advanced Auditing	3
Acct. 281.....	Advanced Accounting Theory.....	3
Acct. 295-96.....	Seminar in Accounting.....	6
Bus. Adm. 231.....	Corporation Financial Problems.....	3

The remaining nine hours of course work are to be selected from courses in or related to accounting with the approval of the adviser.

Business Administration

Prerequisite: an undergraduate major in business administration or the equivalent.

The Master of Arts program in Business Administration requires the following courses:

Bus. Adm. 291-92....	Seminar in Business Management.....	6
Bus. Adm. 297-98....	Business Policy	6

The remaining twelve hours of course work are to be selected from graduate courses in or related to business administration with the approval of the adviser.

Business and Economic Statistics

Prerequisite: an undergraduate major in statistics or the equivalent, coupled with adequate training in economics, business administration, and mathematics.

The Master of Arts program in Business and Economic Statistics requires at least twelve credit hours to be taken from the following:

Statistics 201.....	Design of Experiments.....	3
Statistics 202.....	Theory of Estimation and Testing Hypotheses.....	3
Statistics 203-4.....	The Theory of Econometrics.....	6
Statistics 205-6.....	Advanced Business and Economic Statistics..	6

The remaining twelve hours are to be selected from graduate work offered by the departments of Business Administration, Economics, and Statistics with the approval of the adviser.

Government and Economic Policy

Prerequisite: an undergraduate major in economics or the equivalent.

Graduate courses in economics, especially those in the theory of economic policy, the level of income and employment, national income, economic stabilization, and fiscal policy, comprise the principal part of this program. Graduate courses in economic theory and statistics are recommended to complete the program. These courses and others that may be appropriate, are to be selected with the consent of the adviser.

Public Administration

Prerequisite: an undergraduate major in political science, or an undergraduate background in the social sciences appropriate to specialization in this field.

The Master of Arts in Public Administration requires a program comprising graduate courses in governmental organization and functions, budgetary administration and controls, administrative principles and problems, and personnel management. Other related courses in political science and economics are added upon consultation with the adviser.

Personnel Administration

Prerequisite: an undergraduate major in the social sciences, business administration, or education, coupled with courses in personnel psychology, social psychology, or abnormal psychology.

The program requires six graduate credits in personnel administration offered in the Department of Political Science; six graduate credits in psychology relating to personnel work; six graduate credits in labor relations and business administration; the remaining six credits are elective. Each program must be approved by the adviser.

Vocational Counseling

Prerequisite: An undergraduate major in psychology, business administration, or education; or an undergraduate major in the social sciences appropriate to specialization in this field. The undergraduate background should include necessary basic training in such fields as psychology, sociology, statistics, labor economics, and business management or public administration.

The Master of Arts program in Vocational Counseling requires the following courses:

Psychology 227.....	Seminar: Educational and Vocational Guidance.....	3
Psychology 228.....	Seminar: Techniques of Counseling.....	3
Psychology 229.....	Occupational and Educational Information... ..	3
Psychology 231.....	Test Construction	3
Statistics 246.....	Personnel Measurement Techniques.....	3

The remaining nine hours are elective, with the approval of the adviser.

THE THESIS

Students who plan to complete work for the Master's Degree in one year should register for the thesis at the beginning of the year; otherwise the thesis should be registered for not later than the beginning of the final year. The choice of the thesis subject must be approved by the professor in charge and recorded in the Office of the Registrar by the date announced in the University calendar. The typewritten thesis in its final form must have the approval of the professor in charge and must be presented to the Dean by the student not later than the date announced in the University calendar. Requirements in regard to the form of the thesis are stated on page 40, and additional information will be supplied by the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the Faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year is granted without further tuition payment. If the preparation of the thesis extends beyond the two-year period, it must be registered for again, and tuition paid on the same basis as for a repeated course.

FOREIGN SERVICE REVIEW COURSE

The School of Government is continuing to offer its summer Foreign Service Review Course, started in 1946, for persons interested in preparing for the written Foreign Service Examination given by the Department of State.

Since this Course is primarily an intensive review of college work already completed, and is offered as a service to the superior graduate student who wishes to prepare for the written Foreign Service Examination, no academic credit will be given.

Subjects to be reviewed during the 1950 Course will include the following: American History and American Diplomatic History; European History and European Diplomatic History; Principles of Economics (including International Economics and Foreign Exchange); Geography; General Statistics; Composition; Races, Languages, and Religions; Contemporary Affairs.

For further details, including designation by the Department of State, admission requirements, fees, and living accommodations, address The Director, Foreign Service Review Course, School of Government.

THE DIVISION OF UNIVERSITY STUDENTS

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Elmer Louis Kayser, Ph.D., LL.D., *Dean of the Division of University Students*

THE DEAN'S COUNCIL •

Ralph Dale Kennedy

Francis Edgar Johnston

Charles Rudolph Naeser

GENERAL INFORMATION

INTRODUCTORY

The Division of University Students was established in 1930. In this Division are registered mature students who wish to undertake University courses either for credit or as auditors but who are not interested in working toward degrees in this University.

REGULATIONS

Students in the Division of University Students are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 11-23; the University regulations stated on pages 36-42; and the regulations concerning PROBATION, SUSPENSION, AND WARNINGS which are the same as those stated on pages 54 and 55 under the Junior College

TRANSFER TO REGULAR STATUS

A "University student" may be transferred, at his request, to another college or school of the University only upon complying with the regulations of the specific college or school to which he wishes to transfer. The student should familiarize himself with the regulations printed in the University CATALOGUE concerning admission, residence, amount and quality of work. Specifically, he should note that in some cases not more than thirty (30) hours of credit may be transferred from this Division; that at least the last thirty (30) credit hours must be spent in residence in the college or school granting the degree; and that a general quality-point index of 2.00 must be maintained, with an index of 2.50 in the major.

• The President of the University and the Dean of the Division of University Students are members ex officio of the council.

THE DIVISION OF SPECIAL STUDENTS

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Warren Reed West, Ph.D., *Dean of the Division of Special Students*

THE DEAN'S COUNCIL •

Raymond Pugh Eyman

Thelma Hunt

Fred Salisbury Tupper

GENERAL INFORMATION

INTRODUCTORY

The Division of Special Students was organized in 1944. To this Division may be admitted students who are in the process of qualifying for degree candidacy. Students in this Division are designated "special students".

REGULATIONS

Students in the Division of Special Students are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 11-23; and the University regulations stated on pages 36-42.

SCHOLARSHIP

A student in this Division may be dropped for reasons of scholarship at any time his quality-point index falls below 2.00.

The system of grading and computing scholarship is described in detail on pages 36 and 37.

AMOUNT OF WORK

In each individual case, the schedule will be reduced when it is deemed advisable.

ACADEMIC SCHEDULE

The schedule of the "special student" is made up of courses required in the curriculum to which he wishes to transfer. If he has not completed the language requirements of this curriculum at the time of his admission to the University, he must include a language course in his academic schedule until this requirement is met. Second- or third-group courses may not be taken unless all first-group requirements have been met or are being met concurrently.

• The President of the University and the Dean of the Division of Special Students are members ex officio of the council.

TRANSFER TO REGULAR STATUS

A "special student" may be transferred to another college or school of the University only upon complying with the regulations of the specific college or school to which he wishes to transfer. The student should familiarize himself with the regulations printed in the University CATALOGUE concerning admission, residence, and amount and quality of work. Specifically, he should note that in some cases not more than thirty (30) hours of credit may be transferred from this Division; and that both the residence and scholarship requirements of the school to which he is transferring must be met.

THE SUMMER SESSIONS

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Mitchell Dreesse, Ph.D., *Dean of the Summer Sessions*

The George Washington University is continuing the accelerated program started in 1942. During the summer the University offers two eight-week sessions which together constitute the equivalent of the fall or winter term of the academic year. In addition, the School of Education offers a special six-week session for teachers, with a pre-session of three weeks and a post-session of three weeks. Students may enter the Summer Sessions at the beginning of any of the sessions.

During the summer of 1950, courses are offered in the Junior College, Columbian College (the senior college), the Law School, the School of Engineering, the School of Education, and the School of Government.

For a complete statement concerning summer-term work, see the Summer Sessions catalogue.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

On the following pages of this CATALOGUE, under the alphabetically arranged names of the departments of instruction, are listed the courses of instruction offered by the University in the summer of 1950 and in the academic year 1950-51. The courses as here listed are subject to some slight change. The University reserves the right to withdraw any course announced.

HOURS OF INSTRUCTION

Courses of instruction are scheduled in the morning, afternoon, and evening. Evening classes are identical with the daytime sections of the corresponding courses, are taught by the same instructors, and carry the same amount of credit. By taking the evening and summer classes and extending the time of study beyond the customary four years, a student who is able to give only part of his time to college work may complete a regular curriculum and obtain a degree.

EXPLANATION OF COURSE NUMBERS

An odd number preceding the name of the course indicates that the course is offered in the fall term; an even number, that it is offered in the winter term; and a double number (157-58), that it begins in the fall term and continues in the winter term. The letter "x" following an odd course number (e.g., 21x) indicates that the course, normally offered in the fall term, is given in the winter term. The letter "x" following an even course number (e.g., 22x) indicates that the course, normally offered in the winter term, is given in the fall term.

In the departments of the School of Medicine, first-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and fourth-year courses, from 401 to 500.

In the Law School, first-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and graduate courses, from 401 to 500.

In all other schools and colleges the following system of numbering is used:

First-group courses.—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. With the approval of the adviser and the dean, they may also be taken by juniors and seniors. In certain instances, they may be taken by graduate students to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

Second-group courses.—Courses numbered from 101 to 200, are planned

for students in the junior and senior years. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the officer of instruction, and when the completion of additional work has been certified by the officer of instruction.

Third-group courses.—Courses numbered from 201 to 300 are planned primarily for graduate students. They are open, with the approval of the officer of instruction, to qualified seniors; they are not open to Junior College students or other undergraduates.

INDICATION OF THE AMOUNT OF CREDIT

The number of credit hours given for the satisfactory completion of a course is, in most cases, indicated in parentheses after the name of the course. Thus, a year course giving three hours of credit each term is marked (3-3), and a term course giving three hours of credit is marked (3). A credit hour usually consists of the completion of one fifty-minute period of class work or of one laboratory period a week for one term.

A dagger (†) preceding the number of a year course indicates that the course *may not be entered in the second term and that credit will not be given until the work of both terms has been completed.*

ACCOUNTING

- Ralph Dale Kennedy, Ph.D., *Professor of Accounting, Executive Officer*
 Orton Wells Boyd, A.M., C.P.A., *Professorial Lecturer in Accounting*
 Edwin Lewis, M.B.A., *Lecturer in Accounting*
 Frank Robert Byrne, M.B.A., LL.M., C.P.A., *Lecturer in Accounting*
 _____, *Assistant Professor of Accounting*
 James Leonard Buckler, A.B., *Lecturer in Accounting*
 Ira Ernest Steele, A.M., *Lecturer in Accounting*
 William McPheeters Jones, B.S., C.P.A., *Lecturer in Accounting*
 Harold Jerome Bobys, A.B., C.P.A., *Lecturer in Accounting*
 Frederick Charles Kurtz, M.B.A., *Instructor in Accounting*
 _____, *Instructor*

Minimum requirements for the Bachelor's degree.—See pages 143, 144, and 145.
Minimum requirements for the Master's degree.—See pages 147-48 and 149.

FIRST GROUP

- 1-2 *Introductory Accounting (3-3)* Kennedy and Staff
 Study of basic principles underlying accounting records used by single proprietorships, partnerships, and corporations; preparation of the work sheet and financial statements; introduction to cost accounting and to valuation and income determination problems. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)
 Accounting 1x—same as Accounting 1, but offered winter term. Morning and evening sections.
 Accounting 2x—same as Accounting 2, but offered fall term. Prerequisite: Accounting 1, or permission of the instructor. Morning and evening sections.

SECOND GROUP

- 102 *Business Budgeting (3)* Buckler
 Study of the principles, preparation, and use of a business budget, with emphasis on the importance of the budget as a managerial tool. Prerequisite: Accounting 1-2. Morning. (Also offered 1950 summer term.)
 Accounting 102x—same as Accounting 102, but offered fall term. Evening.
 111 *Federal Taxation (3)* Boyd and Staff
 Study of the accounting and reporting requirements of federal taxation, with emphasis on income and social security taxes; business management problems presented by these taxes will also be considered. Prerequisite: Accounting 1-2. Morning and evening sections. (Also offered 1950 summer term.)

- 112 *Federal Tax Problems* (3) Boyd and Staff
Specialized study planned as a guide to federal tax practice; analysis of tax statutes, regulations, and leading cases. Prerequisite: Accounting 111. Morning and evening sections.
- 121 *Governmental Budgeting* (3) Buckler
Policies, practices, and procedures relating to the formulation and execution of the federal budget; comparison with municipal and state budgets. Prerequisite: Accounting 1-2, or permission of the instructor. Evening.
- 126 *Governmental Accounting* (3) Lewis
Accounting problems of municipal, state, and federal governments; emphasis on appropriation accounts, encumbrances, and fund accounting. Prerequisite: Accounting 1-2, or permission of the instructor. Evening.
- 137 *Financial Statement Analysis* (3) Kennedy, Steele
Methods and techniques of preparing, analyzing, and interpreting financial statements for the guidance of operating executives, directors, stockholders, and creditors; determination and interpretation of trends and ratios. Prerequisite: Accounting 1-2. Morning. (Also offered 1950 summer term.)
Accounting 137x—same as Accounting 137, but offered winter term. Evening.
- 147 *Cost Accounting* (3) ———, Byrne
Study of the purpose, objectives, and theory of industrial cost accounting, with emphasis on inventory control, payroll records, interrelation of cost and general accounts, and types of cost systems. Prerequisite: Accounting 1-2. Evening. (Also offered 1950 summer term.)
Accounting 147x—same as Accounting 147, but offered winter term. Morning.
- 148 *Advanced Cost Accounting* (3) ———
Cost accounting principles and procedures with emphasis on the problems of cost analysis and control, standard costs, and distribution costs. Prerequisite: Accounting 147, or permission of the instructor.
Accounting 148x—same as Accounting 148, but offered fall term. Evening.
- 151-52 *Intermediate Accounting* (3-3) Kurtz, Steele
Study of valuation and income determination problems; treatment of depreciation, funds, and reserves; accounting for the organization, financing, operation, and dissolution of partnerships and corporations. Prerequisite: Accounting 1-2. Morning and evening sections. (Also offered 1950 summer term.)
- 153 *Advanced Accounting* (3) ———
Intensive study of consolidated statements, statement of affairs, realization and liquidation reports, and estate and trust accounting. Prerequisite: Accounting 151-52. Morning and evening sections. (Also offered 1950 summer term.)

- 161 *Auditing* (3) _____, Byrne
Study of the duties and responsibilities of the auditor, principles and procedures of making audits, the technique of verifying each financial statement item, and the preparation of audit working papers and reports. Prerequisite: Accounting 151-52. Morning. (Also offered 1950 summer term.)
Accounting 161x—same as Accounting 161, but offered winter term. Evening.

- 191 *Accounting Systems* (3) _____
Theory and procedure of designing and installing accounting systems for collecting, recording, analyzing, and presenting accounting data. Prerequisite: Accounting 147, 152, and 161, or permission of the instructor. Evening.

- 198 *Professional Accounting Review* (3) _____
Review and coordination of the principles and techniques developed in the accounting curriculum, in preparation both for general practice in the field of accountancy and for professional accounting examinations. Prerequisite: Accounting 111, 126, 147, 153, and 161, or permission of the instructor. Morning and evening sections.

THIRD GROUP

- 226 *Governmental Accounting and Budgeting Problems* (3) Lewis

Advanced principles and practices in federal accounting relationship to general policy and administration. Prerequisite: Accounting 121 and 126, or permission of the instructor. (Not offered in 1950-51.)

- 262 *Advanced Auditing* (3) _____
Preparation of an audit report, investigations in connection with reorganizations and financing programs, accounting statements to be filed with Securities and Exchange Commission, current developments of auditing standards and practice, internal auditing program. Prerequisite: Accounting 161 and permission of the instructor. Evening.

- 281 *Advanced Accounting Theory* (3) Kennedy
An intensive study of advanced accounting principles and concepts and of recent theories in connection with the valuation of assets and the determination of income. Prerequisite: eighteen hours of Accounting or permission of the instructor. Evening.
Accounting 281x—same as Accounting 281, but offered fall term. Morning.

- 295-96 *Seminar in Accounting* (3-3) Kennedy
Study, investigation, and discussion of selected accounting research topics and problems; individual oral and written reports. Admission by permission of the instructor. Evening.

- 299-300 *Thesis* (3-3) The Staff
Time to be arranged. (Also offered 1950 summer term.)

ANATOMY

Warren Andrew, Ph.D., M.D., *Professor of Anatomy, Executive Officer*
 Ross Clayton MacCardle, Ph.D., *Professorial Lecturer in Anatomy*
 Webb Edward Haymaker, M.S., M.D., *Professorial Lecturer in Anatomy*

Paul Calabrisi, A.M., *Associate Professor of Anatomy*
 Ivor Cornman, Ph.D., *Assistant Research Professor of Anatomy*
 Edgar Pleasant Jayne, Ph.D., *Assistant Professor of Anatomy*
 Merton Theodore Waite, M.D., *Clinical Instructor in Anatomy*
 Wilfred Walter Eastman, M.D., *Clinical Instructor in Anatomy*

101-2 *Gross Anatomy*

Calabrisi and Staff

Regional dissection of the human body supplemented with lectures and quiz sections. Study of X-ray anatomy to emphasize the functional aspects of the position, shape, and relation of the viscera and skeletal components. Eighteen hours a week, fall term; nine hours a week, winter term.

103 *Human Embryology*

Andrew and Staff

The origin and development of the human body. Special emphasis on the value of embryology in interpreting anatomical anomalies and variations as seen in gross dissection, surgery, obstetrics, and pathology. Three hours a week.

105 *Neuro-anatomy*

Haymaker and Staff

The macroscopic and microscopic study of the central nervous system and the special sense organs. Emphasis on such dynamic aspects as development, pathways, lesions, etc. Six hours a week.

106 *Microscopic Anatomy*

Andrew and Staff

Study of the detailed minute structure of cells, tissues, and organs of the human body with emphasis on the relation of structure to function. Recognition and interpretation of histological sections tested by practical examinations. Six hours a week.

201-2 *Seminar*

Andrew and Staff

Reports and discussions of special topics by the Staff and graduate students. Regular medical students are encouraged to attend. One hour a week.

295-96 *Research*

Andrew and Staff

Hours and credits to be arranged.

299-300 *Thesis (3-3)*

The Staff

ANESTHESIOLOGY

Donald Harrison Stubbs, A.M., M.D., *Clinical Professor of Anesthesiology*

Charles Seymour Coakley, M.D., *Associate Professor of Anesthesiology, Executive Officer*

Seymour Alpert, A.B., M.D., *Assistant Professor of Anesthesiology*

William Eldridge Bageant, M.D., *Clinical Instructor in Anesthesiology*

Allen Widome, M.D., *Clinical Instructor in Anesthesiology*

261 *Anesthesiology*

Review of basic sciences and correlation between basic sciences and clinical work. One hour a week.

The Staff

433-34 *Advanced Anesthesiology*

Fourth-year students are rotated through the work of the department for a period of three weeks for two students and assigned to work in operating rooms, conferences, and seminars.

The Staff

480 *Research*

Hours to be arranged.

The Staff

ART

Norris Ingersoll Crandall, M.Arch., *Professor of Art, Executive Officer*
Donald Chenoweth Kline, B.Arch., *Associate Professor of Art*

STAFF IN THE CORCORAN SCHOOL OF ART

DRAWING AND PAINTING: Richard Lahey, *Principal*. Eugen Weisz,
Edmund Archer, Jessalee Sickman, Kenneth Stubbs, Omar Carrington

SCULPTURE AND CARVING: Heinz Warneke

COMMERCIAL ART: Henry Liebschutz, William Sholar, Charles Isbell

The major in art appreciation (Departmental).—Prerequisite: Art 11-12 and 71-72. Required: Art 101-2, 121-22, 141-42, 151-52, and 161-62.

The major in drawing and painting (Departmental).—Prerequisite: Art 11-12. Required: Art 121-22, and at least thirty credit hours of drawing and painting. The classes in drawing and painting are held at the Corcoran School of Art.

FIRST GROUP

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|-------|--|---------------------|
| 11-12 | <i>Art Appreciation (3-3)</i> | Crandall |
| | An introduction to the appreciation of the fine arts and to the interpretation of the paintings of the old and modern masters. Morning and evening sections. | |
| 67-68 | <i>Life and Portrait—Drawing and Painting (6-6)</i> | Archer, Stubbs |
| | Morning, afternoon, and evening sections. | |
| 71-72 | <i>Introduction to the Arts in America (3-3)</i> | Kline |
| | Painting, sculpture, architecture, furniture, music, and folk arts. Morning, afternoon, and evening sections. | |
| 73-74 | <i>Still Life and Portrait—Drawing and Painting; Antique Drawing (6-6)</i> | Sickman, Carrington |
| | Morning, afternoon, and evening sections. | |

SECOND GROUP

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|--------|---|----------|
| 101-2 | <i>The Design of the Home (3-3)</i> | Crandall |
| | The history and development of the home, and home furnishings in relation to home design. 1950-51 and alternate years, evening. 1951-52 and alternate years, afternoon. | |
| 121-22 | <i>World History of Art (3-3)</i> | Kline |
| | The fine arts from ancient times to the present. Prerequisite: Art 11-12. 1950-51 and alternate years, evening. 1951-52 and alternate years, afternoon. | |

- 141-42 *Interior Decoration* (3-3) Kline
The selection and use of furniture, wall and floor coverings, draperies, and lighting. 1950-51 and alternate years, afternoon. 1951-52 and alternate years, evening.
- 143-44 *Folk Arts of America* (3-3) Kline
Woodcarving, painting, ceramics, glass, furniture, and music. (Not offered in 1950-51.)
- 151-52 *Modern Art* (3-3) Crandall
The interpretation of the fine arts of the nineteenth and twentieth centuries of Europe and the Americas. Prerequisite: Art 11-12 1950-51 and alternate years, afternoon. 1951-52 and alternate years, evening.
- 161-62 *History of Art Criticism* (3-3) Crandall
A survey of art criticism from ancient Greece to the present. Admission by permission of the instructor. Evening.
- 165-66 *Life and Portrait—Drawing and Painting* (6-6) Lahey, Weisz, Archer
Morning, afternoon, and evening sections.
- 175-76 *Composition* (6-6) Weisz
Design and pictorial organization; drawing and painting. Afternoon.
- 179-80 *Sculpture* (6-6) Warneke
Portrait-life modeling and composition in clay, plaster and wood carving. Afternoon and evening sections.
- 183-84 *Design and Commercial Art* (6-6) Liebschutz, Sholar, Isbell
Prerequisite: One year (6 hours daily) in a professional art school or the equivalent, or by permission of the instructor. Morning, afternoon, and evening sections.
- 185-86 *Advanced Commercial Art*
Credits to be arranged. (Not offered in 1950-51.)

BACTERIOLOGY, HYGIENE, AND PREVENTIVE MEDICINE

Leland Wilbur Parr, Ph.D., *Professor of Bacteriology, Executive Officer*
Ralph Gregory Beachley, M.D., Dr.P.H., *Adjunct Professor of Public Health Practice*
Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
Mary Louise Robbins, Ph.D., *Assistant Professor of Bacteriology*
William Gray McCarten, M.S., *Instructor in Bacteriology*
Lewis Walke McIlhany, M.S., M.D., *Clinical Instructor in Public Health Practice*

SEMINAR LECTURERS

Charles Armstrong, B.S., M.D., Sc.D., *Professorial Lecturer in Preventive Medicine*
Rolla Eugene Dyer, A.B., M.D., LL.D., *Professorial Lecturer in Preventive Medicine*
Royd Ray Sayers, A.M., M.D., *Professorial Lecturer on Industrial Hygiene*
Sara Elizabeth Branham, Ph.D., M.D., Sc.D., *Professorial Lecturer in Preventive Medicine*
Chester Wilson Emmons, Ph.D., *Professorial Lecturer on Medical Mycology*
Willard Hull Wright, D.V.M., Ph.D., *Professorial Lecturer on Medical Zoology*
John Roderick Heller, Jr., B.S., M.D., *Professorial Lecturer on Venereal Disease Control*
Carl John Lauter, M.S., *Professorial Lecturer on Municipal Sanitation*
Robert Carter Cook, *Professorial Lecturer on Medical Genetics*
Robert Hanna Felix, M.D., M.P.H., *Professorial Lecturer on Mental Hygiene*

112 General Bacteriology (4)

Robbins

A study of the fundamentals of bacteriology, including hygienic applications. Methods of cultivation and control of several groups of microorganisms are studied in the laboratory. Prerequisite: any biological laboratory science; Chemistry 151-52. Laboratory fee, \$7.50. Tues., Thurs., and Sat., 9:10 to 12:00 A.M.

209 Medical Microbiology (1-11)

Parr, Griffin

Bacteria, rickettsia, viruses, yeasts, molds, protozoa, and metazoa which relate to the health and diseases of man—cultural study of most important forms; methods of diagnosis by microscopic, cultural,

immunologic, and animal reactions; theory and methods of immunology; vaccines; serums; antibiotics. Open to suitably prepared graduate students; may be elected as a whole or in part by adding the appropriate letter to the course number, with credit allocated as follows: (a) *Bacteriology*, including rickettsia and viruses (7); (b) *Parasitology*, including medical mycology (3); (c) *Immunology* (1). Time to be arranged.

210 *Fundamentals of Epidemiology and Public Health* (2) Parr

Sources, modes, and implications of infection and injury. Prerequisite: Bacteriology 112 or 209. Mon., 2:00 to 4:00 P.M.

219-20 *Advanced Microbiology* Griffin and Staff

Special study of advanced methods and current problems in microbiology for suitably qualified students specializing in microbiology. Prerequisite: Bacteriology 112 or 209; Chemistry 151-52 or the equivalent; permission of the instructor. Time and credits to be arranged.

229 *Virus Techniques* (3) Robbins

Principal cultural and serological methods used in the study of viruses and rickettsiae. Prerequisite: Bacteriology 112 or 209 and permission of the instructor. Offered in 1950-51 and alternate years. Time to be arranged.

230 *Statistics in Microbiology* (3) Griffin

The application of statistical methods to the problems of microbiology. Prerequisite: entrance or elementary college algebra. Offered in 1951-52 and alternate years.

232 *Immunological Methods* (3) Griffin

Preparation and testing of serological materials. Demonstration of basic serological phenomena. Prerequisite: Bacteriology 112 or 209 and permission of the instructor. Offered in 1950-51 and alternate years. Time to be arranged.

295-96 *Research in Bacteriology* The Staff

Time and credits to be arranged.

299-300 *Thesis* (3-3) The Staff

305-6 *Staff Seminar* (1-1) The Staff

Bi-weekly throughout the year.

401-2 *Public Health Practice* (1-1) Beachley

Study of public health practice at national, state, city, and county levels. Public and private agencies. Sat., 10:00 A.M.

404 *Industrial Hygiene* (1) Sayers

For senior medical students and qualified graduate students. Lecture course dealing with the problems of health maintenance and disease prevention and cure as affected by industry. Time to be arranged.

BIOCHEMISTRY

Joseph Hiram Roe, Ph.D., *Professor of Biochemistry, Executive Officer*
 Arnold Kent Balls, Ph.D., *Professorial Lecturer in Biochemistry*
 William Henry Sebrell, Jr., M.D., *Professorial Lecturer on Nutrition*
 George Washington Irving, Jr., Ph.D., *Professorial Lecturer on Proteins*
 Bernard Leonard Horecker, Ph.D., *Professorial Lecturer on Enzymes*
 Carleton Raymond Treadwell, Ph.D., *Associate Professor of Biochemistry*
 Mary Barbara Mills, Ph.D., *Assistant Professor of Biochemistry*
 Benjamin Williams Smith, M.S., *Instructor in Biochemistry*

- | | | |
|--------|--|---------------|
| 113-14 | <i>Biochemistry</i> | Roe and Staff |
| | Physiological and clinical chemistry for the first-year medical student. Two lectures and two three-hour laboratory periods a week. | |
| 221-22 | <i>Biochemistry (4-4)</i> | Treadwell |
| | A lecture and laboratory course for nonmedical students. Prerequisite: Chemistry 22 and 152. Material fee, \$12 a term. Tues. and Thurs., 9:00 to 12:00 A.M. and 1:00 to 2:00 P.M. | |
| 224 | <i>Biochemistry of the Enzymes (1)</i> | Horecker |
| | Lecture course dealing with the biochemistry of the enzymes and enzyme reactions. Prerequisite: Biochemistry 113 or 221. Mon. 5:00 P.M. | |
| 225 | <i>Biochemical Preparations</i> | The Staff |
| | Material fee, \$10. Time and credits to be arranged. | |
| 226 | <i>Biochemical Laboratory Methods</i> | The Staff |
| | Material fee, \$12. Time and credits to be arranged. | |
| 227-28 | <i>Biochemistry Seminar (1-1)</i> | Roe |
| | The current literature in the field of biochemistry, mainly for graduate students, but open to a limited number of specially qualified medical students. Fri., 4:00 P.M. | |
| 231 | <i>Proteins and Amino Acids (1)</i> | Irving |
| | A lecture course. Prerequisite: Biochemistry 114 or 222. (Not offered in 1950-51.) | |
| 251 | <i>Carbohydrate Metabolism (1)</i> | Roe |
| | A lecture course. Prerequisite: Biochemistry 114 or 222. 1950-51 and alternate years, Sat., 9:00 A.M. | |
| 261 | <i>Biochemistry of the Lipids (1)</i> | Treadwell |
| | A lecture course. Prerequisite: Biochemistry 114 or 222. 1951-52 and alternate years, Sat., 9:00 A.M. | |

- 295-96 *Research in Biochemistry* Roe, Treadwell
Time and credits to be arranged.
- 299-300 *Thesis (3-3)* Roe, Treadwell
- 404 *Applied Nutrition (1)* Sebrell
For senior medical students and graduate students. Lecture course
upon dietary requirements, deficiency diseases, and therapeutic diets.
Prerequisite: Biochemistry 114 or 222. Sat., 11:00 A.M.

BIOLOGY *

Paul William Bowman, Ph.D., *Professor of Biology, Executive Officer*
Sam Clark Munson, M.S., *Assistant Professor of Biology*
Robert Carter Cook, *Lecturer on Genetics*
Paul Louis Illg, A.M., *Lecturer in Biology*

The major in Biology (Field-of-Study).—Students will be required to demonstrate in the Major Examination a reasonable knowledge and understanding of the classification and life histories of plants and animals, ecology, geology, evolution, heredity, the physical and cultural development of man, public health problems, and the history of biology. The course offerings will be correlated and supplemented by supervised study in the proseminar. For details, see the pamphlet, which is available in the Office of the Dean of Columbian College, or consult the Executive Officer of the Department.

FIRST GROUP

- 1-2 *Survey in Biology (3-3)* Munson, Illg
Systematic study of the plant and animal kingdoms, with emphasis upon the interdependences of living things and their relations with their environments. Introduction to evolution, heredity, public health, and conservation. Material fee, \$4.50 a term. Lecture (1 hour)—afternoon and evening sections; laboratory (2 hours)—morning, afternoon, and evening sections; field trip to nearby countryside and to museums and other places of biological interest (3 hours)—morning and afternoon sections. (Also offered 1950 summer term.)
Biology 1x—same as Biology 1, but offered winter term. Morning.

SECOND GROUP

- 115-16 *Cytology (3-3)* Bowman
Study of plant and animal cells and their components, including the chromosomes and their role in heredity, with training in the preparation of materials for study. Prerequisite: one year of college work in biology, botany, or zoology. Material fee, \$6 a term. Lecture (1 hour)—evening; laboratory (4 hours)—afternoon and evening. (Also offered 1950 summer term—Biology 115 (3).)
Biology 115x—same as Biology 115, but offered winter term. Lecture—evening; laboratory—afternoon and evening sections.
Biology 116x—same as Biology 116, but offered fall term. Lecture—evening; laboratory—afternoon and evening sections.
- 127-28 *Genetics (3-3)* Cook
A lecture course in which the general principles are illustrated with specific examples of inheritance in plants and animals, including man. Prerequisite: one year of college work in biology, botany, or zoology. Morning. (Also offered 1950 summer term—Biology 127 (3).)

* See also departments of Botany and Zoology, pages 174-75 and 333-34.

139 *Cell Physiology* (3)

Yocum

The fundamental physiology of protoplasm. Prerequisite: Chemistry 12 and one year of college biology, botany, or zoology. 1950-51 and alternate years. Morning.

199-200 *Proseminar in Biology* (3-3)

Bowman

Individually planned and directed study by means of which majors in biology may correlate and supplement the subject matter presented in various regular courses. Time to be arranged.

THIRD GROUP

201-2 *Seminar: Cytology* (3-3)

Bowman

Time to be arranged.

211-12 *Research in Cytology*

Bowman

Time and credits to be arranged. (Also offered 1950 summer term—Biology 211.)

299-300 *Thesis* (3-3)

Bowman

Time to be arranged. (Also offered 1950 summer term—Biology 299 (3).)

BOTANY *

Lawson Edwin Yocum, Ph.D., *Professor of Botany, Executive Officer*
 William Webster Diehl, Ph.D., *Adjunct Professor of Mycology*
 Lyman Bradford Smith, Ph.D., *Professorial Lecturer on Taxonomy*
 John Edward Cantlon, B.S., *Assistant Professor of Botany*
 Caroline Lander Adams, Ph.D., *Lecturer in Botany*

Minimum requirements for the major in Botany (Departmental).—Twenty-four credit hours of botany beyond the introductory courses, with collaterals as recommended in conference.

FIRST GROUP

1 *Structure and Functions of the Flowering Plant*† (3) Yocum

The typical plant as a working mechanism, with the emphasis on the general biological significance of plant physiology. Material fee, \$4.50. Lecture (2 hours); laboratory (2 hours)—morning, afternoon, and evening sections. (Also offered 1950 summer term.)

Botany 1x—same as Botany 1, but offered winter term. Morning and afternoon sections.

2 *Survey of the Plant Kingdom* (3) Yocum

Study of the different kinds of plants, with emphasis on the evolution of the plant kingdom; practice in identifying flowering plants. Material fee, \$4.50. Lecture (2 hours); laboratory (2 hours)—morning, afternoon, and evening sections. (Also offered 1950 summer term.)

SECOND GROUP

105 *Field Botany* (3)

Field trips to neighboring localities of botanical interest, with classroom study. Prerequisite: Botany 1 and 2 or Biology 1-2. Lecture (2 hours); laboratory (4 hours); field trips (3 hours). 1951 and alternate summer terms.

107 *Algae, Fungi, and Mosses* (3)

Adams

Field and laboratory study of the habitat, structure, and identification of representative local forms of algae, fungi, and mosses. Prerequisite: Botany 1 and 2 or Biology 1-2.

Summer term 1950.

109 *Plant Morphology* (3)

Adams

Survey of structure of root, stem, leaf, and flower of seed plants; followed by the application to several of the economically important families. Prerequisite: Botany 1 and 2 or Biology 1-2. Lecture (2 hours); laboratory (2 hours). 1950-51 and alternate years, morning.

116 *Plant Growth* (3)

Yocum

The functions of plants with special emphasis on the practical prob-

* See also the departments of Biology and Zoology, pages 173-73 and 330-33.

† Before completing registration for Botany 1, each student must obtain from the representative of the Department an assignment to a laboratory section.

lems of growing and of caring for plants. Prerequisite: Botany 1 and 2 or Biology 1-2. Lecture (2 hours); laboratory (2 hours). 1950-51 and alternate years, morning.

125-26 *Plant Taxonomy* (3-3)

Smith

A study of the characteristics, phylogeny, and economics of selected families of the flowering plants. Field collection and identification. Prerequisite: Botany 1 and 2 or Biology 1-2. Material fee, \$4.50. Lecture (1 hour); laboratory and field (4 hours). 1951-52 and alternate years. Evening.

131-32 *Mycology* (3-3)

Diehl

Lecture (1 hour); laboratory (4 hours). 1950-51 and alternate years, evening.

133-34 *Plant Pathology* (3-3)

Diehl

Material fee, \$6 a term. 1951-52 and alternate years, evening.

135-36 *Plant Physiology* (3-3)

Yocum

Fall term: mineral and water relations of plants; winter term: organic syntheses and growth. Prerequisite: Chemistry 11-12. Material fee, \$6 a term. 1951-52 and alternate years, evening.

138 *Growth Regulators* (3)

Yocum

Lectures, literature reviews, and laboratory studies of the physiology of growth regulators and their functions in plants and animals. Prerequisite: Botany 1 and 2 or Biology 1-2. Summer term 1950.

141-42 *Plant Ecology* (3-3)

Cantlon

Lecture (2 hours); laboratory (2 hours). 1950-51 and alternate years, evening.

143 *Plant Distribution* (3)

Plant distribution, especially in the United States and Canada; biological relationships of eastern America with eastern Asia and of lands in the Southern Hemisphere, and their bearing on biological and geological history. 1951-52 and alternate years, evening.

144 *Vegetation of the United States* (3)

Seminar on the areas and characteristics of the principal types of vegetation in the United States. 1951-52 and alternate years, evening.

THIRD GROUP

221-22 *Seminar: Taxonomy* (3-3)

(Not offered in 1950-51.)

Smith

235-36 *Seminar: Physiology* (3-3)

1950-51 and alternate years. Time to be arranged.

Yocum

241-42 *Seminar: Ecology* (3-3)

(Not offered in 1950-51.)

295-96 *Research*

Time and credits to be arranged. (Also offered 1950 summer term.)

The Staff

299-300 *Thesis* (3-3)

Time to be arranged. (Also offered 1950 summer term.)

The Staff

BUSINESS ADMINISTRATION

*Richard Norman Owens, Ph.D., C.P.A., *Professor of Business Administration*

Harold Griffith Sutton, M.S., *Professor of Finance*

Arlin Rex Johnson, Ph.D., *Professorial Lecturer on Marketing*

James Carlton Dockeray, Ph.D., *Professorial Lecturer in Business Administration*

Montell Ernest Ogdon, Ph.D., *Professorial Lecturer in Business Administration*

Alfred Ernest Lampe, B.S., *Professorial Lecturer on Insurance*

Joe Lee Jessup, M.B.A., *Associate Professor of Business Administration, Acting Executive Officer*

Merle Welshans, A.M., *Assistant Professor of Business Administration*

Gordon Barnewall, M.B.A., *Assistant Professor of Business Administration*

John William Skinner, A.M., *Instructor in Business Administration*

Minimum requirements for the Bachelor's degree.—See pages 143 and 144-45.

Minimum requirements for the Master's degree.—See pages 147-48 and 149.

FIRST GROUP

- 101 *Business Organization and Combination* (3) Skinner
Simple and interrelated forms of business enterprise and their control by government. Morning and evening sections.
- 102 *Business Management* (3) Skinner
The management movement, organization of an enterprise, principles of management and their application to various departments of an enterprise. Morning and evening sections. (Also offered 1950 summer term.)
- 105 *Personnel Management in Industry* (3) ———
Organization and work of the personnel department, human relations in business. Morning. (Also offered 1950 summer term.)
Business Administration 105x—same as Business Administration 105, but offered fall term. Evening.
- 106x *Problems in Personnel Management* (3)
Principles of human relations illustrated by cases drawn from business and industry. Prerequisite: Business Administration 105. (Not offered in 1950-51.)
- 109 *Office Management* (3) Barnewall
Organization and layout of an office, use of office machines and appliances, planning and execution of work, supervision problems. Evening.
Business Administration 109x—same as Business Administration 109, but offered winter term. Morning.

* On leave of absence 1950-51.

- 113 Real Estate (3)** Welshans
Fundamentals of real estate practice; leasing and property management; valuation, financing, and taxation. Evening.
- 116 Urban Transportation (3)**
Local transportation in economic development; regulation, finance, operation, and management of transit services; community planning for streets, highways, parking, and traffic control. Evening.
- 121 General Insurance (3)** Skinner
A general course in underlying principles of property, life, marine, and casualty insurance, and the function of insurance in the economic life of a business or individual. Prerequisite: Economics 1-2. Evening.
Business Administration 121x—same as Business Administration 121, but offered winter term. Morning.
- 123-24 Property and Casualty Insurance I and II (2-2)** Lampe
The principles and practices of property and casualty insurance with emphasis on the economics of insurance, types of carriers, contract provisions, agency and brokerage, and state regulation and supervision. Prerequisite: Business Administration 121. Evening.
- 125-26 Property and Casualty Insurance III and IV (2-2)** Lampe
The principles and practices of Property and Casualty Insurance with emphasis on theory of probability, rates and rating, reserves, financial statements, and investments; loss adjustment and loss prevention. Prerequisite: Business Administration 123-24. Evening.
- 131 Business Finance (3)** Welshans
Basic principles involved in the financing of business enterprises. Prerequisite: Accounting 1-2. Morning and evening sections. (Also offered 1950 summer term.)
Business Administration 131x—same as Business Administration 131, but offered winter term. Evening.
- 136 Commercial Credit (3)** Welshans
Types and sources of credit information, credit relationships from the standpoint of the commercial bank and the commercial business enterprise. Prerequisite: Accounting 1-2. Evening. (Also offered 1950 summer term—Business Administration 136, *Business Problems* (3).)
- 138x Investment (3)** Welshans
Analysis of factors of investment credit with application to different types of investments, proper selection of investments for various classes of investors, regulation. Prerequisite: Accounting 1-2. Evening.
- 141 Principles of Marketing (3)**
A survey of marketing, giving particular attention to consumption, retailing, wholesaling, and sales management; the entire marketing structure and its relation to the total economy. Prerequisite: Economics 1-2. Morning. (Also offered 1950 summer term.)
Business Administration 141x—same as Business Administration 141, but offered winter term. Evening.

- 142 *Marketing Problems* (3) Barnewall
Marketing principles applied to specific distribution policy and operating problems of retailers, wholesalers, and manufacturers handling consumer and industrial goods. Prerequisite: Business Administration 141. Morning.
- 145 *Sales Management* (3) Jessup
Organization of the sales department, sales planning and forecasting, quotas, territories, performance standards, and analysis and control of distribution costs. Prerequisite: Business Administration 141. Morning. (Also offered 1950 summer term.)
- 146 *Sales Management Problems* (3) Jessup
Problems of marketing executives with respect to planning sales programs, territories, and salesmen's quotas; selection, training, and supervision of sales force. Prerequisite: Business Administration 145. Morning.
- 147 *Advertising* (3) Barnewall
Advertising as a function of marketing and merchandising; evaluation, purchase, criticism, and control of advertising; uses and limitations of advertising as a tool of management. Morning. (Also offered 1950 summer term.)
- 150 *Principles of Purchasing* (3) Barnewall
Organization for purchasing, purchasing policies, market relationships, selection of merchandise, purchasing information and records. Evening.
- 151 *Retailing* (3) Barnewall
Principles and problems in retail merchandising, including markup, inventory valuation, and expense control; service and personnel problems. Evening.
- 158 *Traffic Management* (3)
Organization and records of traffic department, routing of shipments, services by carriers, rates and charges, relation of shipper to transportation agencies. (Not offered in 1950-51.)
- 175 *Introduction to Foreign Trade* (3) Ogdon
Terminology, trade usages and practices, conditions essential to successful trading, economic bases of international trade, obstacles to trade, tariffs, impact of governmental controls on private trade. Prerequisite: Economics 1-3. Evening.
- 176 *Exporting and Importing* (3) Ogdon
Policy and operating questions of foreign trade, financing and documentation of shipments. Prerequisite: Business Administration 175. Evening.
- 178 *Foreign Markets* (3) Barnewall
Pattern of world trade by countries and commodities, methods of preparing market surveys, selected regional market analyses. Prerequisite: Economics 1-2. Evening.

- 191 *Business Reports and Analyses* (3) Dockeray
Research in specific business problems and reports for management use. Open to seniors. Morning.
Business Administration 191x—same as Business Administration 191, but offered winter term. Morning.

- 195 *Controllership* (3) Jessup
The duties, responsibilities, and place of the controller in a business organization; relations of controller to other departments and regulatory bodies; and the controller's relation to price setting and inventories, depreciation policies, internal auditing, expense control and budgeting, and financial reports to management, stockholders, and employees. Prerequisite: Accounting 1-2. Open to seniors. Morning. (Also offered 1950 summer term.)

- 198 *Problems in Business Management* (3) Jessup
Principles and methods of management illustrated by cases drawn from business and industry. Prerequisite: Business Administration 102. Open to seniors. Morning.
Business Administration 198x—same as Business Administration 198, but offered fall term. Morning.

THIRD GROUP

- 231 *Corporate Financial Problems* (3) Welshans
Financial practice in promotion, consolidation, and mergers; capital structure adjustments; and reorganization. Evening. (Also offered 1950 summer term.)

- 232 *Seminar in Business Finance* (3) Welshans
Research in advanced financial problems. Evening.

- 241 *Seminar in Marketing* (3) Barnewall
Research and reports on marketing problems. Evening.

- 291-92 *Seminar in Business Management* (3-3) Johnson
Research on various phases of management, including business, industrial, and personnel management. Evening. (Also offered 1950 summer term—Business Administration 291 (3).)

- 296 *Seminar in Controllership* (3) Jessup
Research on advanced problems of the controller, in all types of business organization and the Federal Government. Evening.

- 297-98 *Business Policy* (3-3) Jessup
Problems of management are analyzed with the view of developing a practical solution; cases are used to show the problems of personnel in marketing, industrial management, finance, etc. Evening.

- 299-300 *Thesis* (3-3) The Staff
Time to be arranged. (Also offered 1950 summer term.)

CHEMISTRY

Colin Mackenzie Mackall, Ph.D., *Professor Emeritus of Chemistry in Residence*

Benjamin Douglass Van Evera, Ph.D., *Professor of Chemistry*

Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*

Charles Rudolph Naeser, Ph.D., *Professor of Chemistry, Executive Officer*

William Bultman Holton, Ph.D., *Professorial Lecturer in Chemistry*

Robert Corbin Vincent, Ph.D., *Associate Professor of Chemistry*

Reuben Esselstyn Wood, Ph.D., *Assistant Professor of Chemistry*

William Frederick Sager, Ph.D., *Assistant Professor of Chemistry*

Daniel Remsen Norton, Ph.D., *Assistant Professor of Chemistry*

James Willard Harkness, B.S., Ed.M., *Assistant Professor of Chemistry*

Gilbert Pierce Haight, Jr., Ph.D., *Assistant Professor of Chemistry*

John Farago, Ph.D., *Lecturer in Chemistry*

Theodore Peter Perros, M.S., *Instructor in Chemistry*

The Major in Chemistry (Departmental).—Prerequisite: Chemistry 11-12, 21 and 22; Mathematics 19 and 20; Physics 5, 6, 7, and 8. Required: Chemistry 111-12, 122, 151-52, and 135 or 155 (two credit hours). The work of the junior and senior years must be approved by the Department. The German language is strongly recommended for all majors, and is essential for all students doing graduate work.

Requirements for the Master's degree.—In addition to the requirements for the Bachelor's degree: Chemistry 131-32, 193, 211-12, 251-52, 291-92, 299-300, and the program must include at least four credit hours of laboratory courses. A reading knowledge examination in French or German (German preferred) must be passed before the second half of the work is started.

Registration.—Before completing registration each student must obtain from the representative of the Department an assignment to lecture, recitation, and laboratory sections.

FIRST GROUP

†3-4 Survey of Physical Sciences (4-4)

Haight

Survey of physical science. An introduction to the physical sciences including chemistry, physics, astronomy, and geology with emphasis on analysis of scientific method and its achievements rather than on the mechanics of science. A terminal course for non-science majors. Laboratory fee, \$6 a term. Lecture (3 hours); laboratory (3 hours) —morning and afternoon sections.

†11-12 *General Chemistry* (4-4) Naeser, Harkness, Haight, Perros

Chemistry 11-12 is an elementary course in general chemistry. Prerequisite: one year of high school algebra. Laboratory fee, \$12 a term. Lecture (2 hours); laboratory (4 hours); recitation (1 hour)—morning, afternoon, and evening sections. (Also offered 1950 summer term.)

Chemistry 11x—same as Chemistry 11, but offered winter term. Morning, afternoon, and evening sections.

Chemistry 12x—same as Chemistry 12, but offered fall term. Afternoon and evening sections.

21 *Qualitative Inorganic Analysis* (4) Vincent

Theoretical and practical study of methods of separating and identifying the more common cations and anions using semi-micro techniques. Prerequisite: Chemistry 12. Laboratory fee, \$12. Lecture (2 hours); laboratory (6 hours)—morning, afternoon, and evening sections. (Also offered 1950 summer term.)

Chemistry 21x—same as Chemistry 21, but offered winter term. Lecture—afternoon and evening sections; laboratory—morning, afternoon, and evening sections.

22 *Quantitative Inorganic Analysis I* (4) Norton

Theory and practice of quantitative analysis by typical volumetric and gravimetric procedures. Prerequisite: Chemistry 21. Laboratory fee, \$15. Lecture (2 hours)—morning and evening sections; laboratory (6 hours)—morning, afternoon, and evening sections. (Also offered 1950 summer term.)

SECOND GROUP

†111-12 *Physical Chemistry* (5-5) Wood

Introduction to physical chemistry. Prerequisite: Chemistry 22 and 152; Mathematics 20; Physics 8. Laboratory fee, \$12 a term. Lecture (3 hours)—morning and evening sections; laboratory (6 hours)—afternoon, evening, and Saturday sections.

122x *Quantitative Inorganic Analysis II* (4) Norton

A continuation of Chemistry 22 including the theory and practice of organic reagents, electrochemistry, and colorimetry in the analysis of more complex materials. Prerequisite: Chemistry 22. Laboratory fee, \$15. Lecture (2 hours)—morning and evening sections; laboratory (6 hours)—afternoon and evening sections.

†131-32 *Inorganic Chemistry* (2-2) Naeser

Application of modern chemical theories to inorganic substances and reactions; detailed study, developed from the periodic table, of the descriptive chemistry of the more common elements. Prerequisite: Chemistry 152. Prerequisite or concurrent registration: Chemistry 111-12. 1950-51 and alternate years, morning. 1951-52 and alternate years, evening.

- 135-36 *Inorganic Chemistry: Preparations* (2-2) Naeser
Application of the technique of inorganic chemistry to the preparation and purification of a list of selected substances. Prerequisite: Chemistry 152. Prerequisite or concurrent registration: Chemistry 111-12. Laboratory fee, \$14 a term. Laboratory (6 hours), afternoon. (Also offered 1950 summer term.)
Chemistry 135x—same as Chemistry 135, but offered winter term. Afternoon.

- †151-52 *Organic Chemistry* (4-4) Mackall, Sager
Chemistry of the compounds of carbon. Credit is not given for Chemistry 151 until Chemistry 152 is completed. Prerequisite: Chemistry 21. Chemistry 151.—Laboratory fee, \$6. Lecture (3 hours)—morning and evening sections; laboratory (3 hours)—morning, afternoon, and evening sections. Chemistry 152.—Laboratory fee, \$12. Lecture (2 hours)—morning and evening sections; laboratory (6 hours)—morning, afternoon, and evening sections. (Also offered 1950 summer term.)

- 155 *Organic Chemistry: Preparations* (2 or 3) Wrenn
The synthesis of organic compounds and the application of the technique of organic chemistry to the preparation of pure compounds, using larger amounts and greater refinements than in Chemistry 151-52. Prerequisite: Chemistry 22 and 152. Laboratory fee, \$8 a credit hour. Time to be arranged. (Also offered 1950 summer term.)
Chemistry 155x—same as Chemistry 155, but offered winter term.

- 156 *Qualitative Organic Analysis* (3) Wrenn
The identification of pure organic compounds, the separation of mixtures, and the identification of their components. Required of all students planning thesis work in the field of Organic Chemistry. Prerequisite: Chemistry 22 and 155. Laboratory fee, \$15. Laboratory (6 hours). Time to be arranged.

- 191x *History of Chemistry* (2) Perros
The development of chemistry, and the biographies of eminent contributors to the science. Prerequisite: Chemistry 22 and 152. Morning.

- 193 *Chemical Literature* (1) Wrenn
A general course in chemical literature with reference works and reports. Prerequisite: Chemistry 22 and 152; prerequisite or concurrent registration: Chemistry 111-12. Evening.

THIRD GROUP

- 203 *Chemical Kinetics* (2) Wood
The rates of chemical reaction and the factors influencing them. Prerequisite: Chemistry 112. Offered in 1951-52, evening.

- 211-12 *Advanced Physical Chemistry* (2-2) Van Evera
Development and application of the principles of thermodynamics and the kinetic theory to chemical problems. Prerequisite: Chemistry 112. 1950-51 and alternate years, morning. 1951-52 and alternate years, evening.

- 216 *Statistical Mechanics* (3) Sager
An introduction to classical and quantum statistics designed to acquaint the student with the basic principles and application of the method. Prerequisite or concurrent registration: Chemistry 212, or permission of instructor. Offered in 1951-52, evening.
- 221-22 *Advanced Analytical Chemistry* (2 or 3) Norton
A survey of the theory and application of chemical and physico-chemical methods of analysis. Prerequisite: Chemistry 22 and 122. The lectures may be taken for 2 credits a term without the laboratory work. Laboratory fee, \$8 a term. Lecture (2 hours)—1950-51 and alternate years, evening; 1951-52 and alternate years, morning. Laboratory (3 hours—optional)—time to be arranged.
- 226 *Quantitative Organic Analysis* (3) Vincent
Micro and semi-micro procedures. Prerequisite: Chemistry 122 and 152; permission of the instructor. Laboratory fee, \$12. Time to be arranged.
- †231-32 *Special Topics in Inorganic Chemistry: the Chemistry of the Less Familiar Elements* (2-2) Holton
Prerequisite: Chemistry 132 and 152. Evening.
- 233-34 *Radiochemistry* (2-2) Holton
The preparation, properties, and uses of radioactive isotopes, both natural and artificial. Prerequisite: Chemistry 131-32. Offered in 1951-52, evening.
- 251-52 *Advanced Organic Chemistry* (3-3) Wrenn
The syntheses, reactions, and properties of carbon compounds; the fundamental theories of organic chemistry. Prerequisite: Chemistry 152; prerequisite or concurrent registration: Chemistry 111-12 and 193. 1950-51 and alternate years, evening. 1951-52 and alternate years, morning.
- 253 *Advanced Synthetic Organic Chemistry* (3) Wrenn
A critical study of the reactions employed in the synthesis of organic compounds. Prerequisite: Chemistry 251. Time to be arranged.
- 257 *Theoretical Organic Chemistry* (3) Sager
Prerequisite: Chemistry 252. A survey of modern theories of organic chemistry with emphasis on reaction mechanisms. Offered in 1951-52, evening.
- 258 *Special Topics in Organic Chemistry: Chemistry of Natural Products* (2) Farago
Prerequisite: Chemistry 251-52. Evening.
- 291-92 *Seminar: Recent Developments in Chemistry* (1-1) The Staff
Individual investigations of special problems. All students registered for a Master's degree in chemistry are expected to attend this seminar during residence for the degree, and to take part in its programs. Credit for participation in the seminar work may be obtained by reg-

istering for this course during the last two terms of residence; this credit, however, is based upon the seminar work during the entire period of residence. Alternate weeks, evening.

295-96 *Research*

The Staff

Research on problems approved by the Staff. Open to qualified students with advanced training. Laboratory fee, \$6 a credit hour. Time and credits to be arranged. (Also offered 1950 summer term.)

299-300 *Thesis (3-3)*

The Staff

Laboratory fee, \$15 a term. Time to be arranged. (Also offered 1950 summer term.)

CIVIL ENGINEERING

- Carl Hugo Walther, B.E., M.C.E., *Professor of Civil Engineering*
 Bruce Douglas Greenshields, C.E., Ph.D., *Professor of Civil Engineering, Executive Officer*
 Waldo Edward Smith, B.E., M.S. in C.E., *Professorial Lecturer in Civil Engineering*
 Raymond Pugh Eyman, C.E., *Associate Professor of Civil Engineering*
 James Joseph Kerley, Jr., A.B. in C.E., *Assistant Professor of Civil Engineering*
 Haaren Albert Miklofsky, B.C.E., M.Eng., *Assistant Professor of Civil Engineering*
 Edgar Stover Walker, B.S. in C.E., *Lecturer in Civil Engineering*
 Moses Freedman, B.S. in Eng., *Lecturer in Civil Engineering*
 William Gammon Hayward, B.S. in C.E., *Lecturer in Civil Engineering*
 Alvin Raymond Schwab, B.S., M.S. in Eng., *Lecturer in Civil Engineering*
 Asriel Taragin, B.E., *Lecturer in Civil Engineering*
 Frank Spaulding Borden, B.C.E., *Lecturer in Civil Engineering*
 Mark Michael Kiley, A.M. in Eng., *Instructor in Civil Engineering*
 Vincent Harry Hennessy, B.C.E., *Associate in Civil Engineering*

Minimum requirements for the major.—See pages 112-13.

FIRST GROUP

- 2 *Plane Surveying* (3) Eyman and Staff
 Principles, methods, and instruments used in surveying; with field work. Prerequisite: Trigonometry. Surveying fee, \$8. Lecture (2 hours)—morning, afternoon, and evening sections; field work (3 hours)—morning and afternoon sections.
- 15 *Navigation* (3) Eyman
 Principles, methods, and instruments used in surface and aerial navigation. Charts, piloting, dead-reckoning, nautical astronomy, position determination. Prerequisite: Trigonometry. (Not offered in 1950-51.)
- 21 *Analytical Mechanics: Statics* (2) Greenshields and Staff
 Composition and resolution of forces; axial stresses; centroids; friction. Prerequisite: Physics 6; prerequisite or concurrent registration: Mathematics 20. Morning and evening sections. (Also offered 1950 summer term.)
- 22 *Analytical Mechanics: Dynamics* (3) Greenshields and Staff
 Kinematics of a particle; kinetics of a body in translation, rotation, and plane motion; work and energy; impulse and momentum; simple

vibrations. Prerequisite: Civil Engineering 21. Morning and evening sections. (Also offered 1950 summer term.)

- 23 *Higher Surveying* (4) Eyman, Walker
Elements of geodesy, triangulation, topography, hydrography, and precise and trigonometric leveling, with field work. Prerequisite: Civil Engineering 2. Surveying fee, \$8. Lecture (3 hours)—morning and evening sections; field work (3 hours)—afternoon and Saturday morning sections.

- 25-26 *Engineering Materials* (2-2) The Staff
Emphasis on properties and uses of nonmetallic materials such as cements, fuels, and plastics; and metallic materials including steel, copper, aluminum, and alloys. Prerequisite or concurrent registration: Chemistry 12. Morning and evening sections.

SECOND GROUP

- 123 *Strength of Materials* (3) Kerley, Smith
Tension, compression, shear, flexure, and torsion; deflection; combined and working stresses. Prerequisites: Civil Engineering 22. Morning and evening sections. (Also offered 1950 summer term.)

- 136 *Hydraulics* (3) Kerley, Smith
Hydrostatics: flow through pipes and open channels; laminar and turbulent flow. Prerequisite: Civil Engineering 22. Morning and evening sections. (Also offered 1950 summer term.)

- 140 *Materials and Hydraulics Laboratory* (2) Kerley, Hennessy
Determination of the properties of materials by mechanical tests, and a study of the flow of fluids. Prerequisite: Civil Engineering 123; prerequisite or concurrent registration: Civil Engineering 26 and 136. Laboratory fee, \$6. Laboratory (3 hours)—afternoon and evening sections.

Civil Engineering 140x—same as Civil Engineering 140, but offered fall term. Afternoon and evening sections.

- 141 *Graphic Statics* (3) Kiley, Schwab
Fundamental principles; analyses of beams; determination of stresses in roof trusses and framed bents. Prerequisite or concurrent registration: Civil Engineering 123. Drafting-room fee, \$1. Lecture (2 hours)—morning and evening sections; drafting room (3 hours)—afternoon and evening sections.

- 142 *Bridge Stresses** (3) Kiley
Determination of stresses in modern types of bridge trusses. Prerequisite: Civil Engineering 141. Drafting-room fee, \$1. Lecture (2 hours)—morning; drafting room (3 hours)—afternoon.

- 147-48 *Structural Design* (2-2) Walther, Miklofsky
Computations and drawings for the design of steel structures. Prerequisite: Civil Engineering 142. Drafting-room fee, \$3 a term. Drafting room (6 hours)—afternoon and evening sections.

* An additional evening section of 142 will be offered in 1951-52 and alternate years.

- 149-50 Concrete and Masonry Construction*** (3-3) Miklofsky, Bagdoyan
Plain concrete, general properties and theory of reinforced concrete, foundations, and retaining walls. Prerequisite: Civil Engineering 25 and 123. Civil Engineering 149, laboratory fee, \$6; Civil Engineering 150, drafting-room fee, \$1. Lecture (2 hours)—morning and evening sections; laboratory (3 hours)—afternoon and evening sections.
- 151-52 Statically Indeterminate Structures*** (2-2) Walther, Miklofsky
A study of such structures as continuous spans, rigid frames, and arches by methods of work, slope deflection, and moment distribution. Prerequisite: Civil Engineering 142. Morning and evening sections.
- 154 Advanced Mechanics of Materials** (3)
Advanced topics in the mechanics of materials. Stresses at a point, thick cylinders, general bending, torsion, localized stress, and stress concentration. Prerequisite: Civil Engineering 25-26 and 123. 1950-51 and alternate years, evening.
- 164 Highway Engineering** (3) Greenshields, Taragin
Highway economics, location, construction, and maintenance. Prerequisite: Civil Engineering 25 and 171. Morning and evening sections.
- 171 Route Surveying** (3) Eyman, Hayward
Curves and earthwork, and methods of location as used on railroads and highways; field work; complete highway location. Prerequisite: Civil Engineering 2. Surveying fee, \$8. Lecture (2 hours)—morning and evening sections; field work (3 hours)—afternoon and Saturday morning sections.
- 181-82 Water Supply and Sewerage** (3-3) Kiley
Collection, storage, purification, and distribution of water; sewerage systems and treatment of sewage. Prerequisite: Civil Engineering 136; Chemistry 12. Morning and evening sections.
- 187-88 Engineering Contracts and Specifications** (2-2) Freedman
Contract essentials, types, and legal principles; analysis and preparation of specifications. Prerequisite or concurrent registration: Civil Engineering 25-26. Evening.
- 189-90 Civil Engineering Proseminar** (1-1) Greenshields, Eyman
Morning and afternoon sections.

* The evening sections of 149-50 and 151-52 will be offered in 1950-51 and alternate years.

CLASSICAL LANGUAGES AND LITERATURES

John Francis Latimer, Ph.D., *Associate Professor of Classical Languages and Literatures, Executive Officer*

FIRST GROUP

†1-2 *First-year Latin (3-3)* Latimer
Essentials of Latin grammar, prose composition, easy reading selections. Morning.

†3-4 *Second-year Latin (3-3)* Latimer
Rapid review of Latin grammar, prose composition, wide variety of selections for rapid reading. Evening.

†13-14 *Second-year Greek (3-3)* Latimer
Rapid review of Greek grammar, prose composition, wide variety of selections for rapid reading. Morning.

IN ENGLISH TRANSLATION

71-72 *Greek and Roman Backgrounds in Literature (3-3)* Latimer
A survey in English translation of the principal Greek and Roman authors and their literary influence. Evening.

SECOND GROUP

111-12 *Selected Roman Authors (3-3)* Latimer
According to the needs of the class, certain Roman authors will be selected for study each term. Course may be repeated for credit. Morning.

DERMATOLOGY AND SYPHILOLOGY

Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology, Executive Officer*

George William Creswell, A.B., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*

Hayden Kirby-Smith, B.S., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*

Theodore Claremont Chen Fong, M.D., *Associate in Dermatology and Syphilology*

James Quincy Gant, Jr., M.S., M.D., *Associate in Dermatology and Syphilology*

Wendell Melvin Willett, M.D., *Associate in Dermatology and Syphilology*

Reuben Goodman, M.D., *Clinical Instructor in Dermatology and Syphilology*

313-14 *Dermatology and Syphilology* The Staff
Lectures on diseases of the skin and syphilis. One hour a week.

316 *Neurosyphilis* Fong
Lectures, clinical demonstrations, and practical diagnostic and therapeutic procedures. One hour a week for eight weeks.

317-18 *Clinic* The Staff
Case demonstrations, diagnosis, and treatment of skin diseases and syphilis. Three hours a week. Gallinger Hospital.

407-8 *Clinic* The Staff
Dermatology and syphilology in infants and children. Childrens Hospital. Two hours a week.

409-10 *Clinic* The Staff
Clinical demonstration, diseases of the skin. Two hours a week. Emergency Hospital.

411-12 *Clinic* The Staff
Clinical demonstrations, diseases of the skin, and diagnosis and therapy of syphilis. Two hours a week. University Hospital.

ECONOMICS

Arthur Edward Burns, Ph.D., *Professor of Economics*

*Donald Stevenson Watson, Ph.D., *Professor of Economics, Executive Officer*

James Christopher Corliss, A.M., *Adjunct Professor of Inter-American Economics*

Gerhard Colm, Dr. rer. pol., *Professorial Lecturer in Economics*

Ralph Aubrey Young, M.B.A., Ph.D., *Professorial Lecturer in Economics*

Edward Campion Acheson, Ph.D., *Associate Professor of Finance*

Paul Edward Hanchett, Ph.D., *Assistant Professor of Economics*

Albert Raymond Miller, Jr., A.M., *Assistant Professor of Economics*

Edwin Medbery Fitch, Ph.D., *Lecturer in Economics*

Grover William Ensley, M.B.A., Ph.D., *Lecturer in Economics*

George Jaszi, Ph.D., *Lecturer in Economics*

Wilson Emerson Schmidt, A.M., *Instructor in Economics*

The major in Economics (Departmental).—Prerequisite: Economics 1-2. Required: (1) Economics 101 and three additional credit hours in economic theory (courses numbered 100-109); (2) six credit hours in each of three of the five following groups: finance (courses numbered 120-29), labor (courses numbered 140-49), government and economic policy (courses numbered 160-69), public utilities and transportation (courses numbered 170-79), and international economics (courses numbered 180-92); (3) Statistics 111-12, and nine credit hours of other second-group courses selected from the following departments—Accounting, Business Administration, History, Philosophy, Political Science, Sociology, and Statistics.

The major in Latin American Civilization and Culture (Field-of-Study).—The major, administered under the field-of-study plan, includes the political and social history, the economic development, the governmental structure and international relations, the principal literary works and writers, and a reasonable acquaintance with the spoken language of the Latin American republics. The Department of Economics provides a proseminar (Economics 193-94) intended to assist the student in preparing himself for the major examination. For further details, see the pamphlet, which is available in the Office of the Dean of Columbian College.

FIRST GROUP

1-2 *Introductory Economics*† (3-3)

The Staff

Survey of the major economic institutions and economic problems in contemporary society. Economics 1 is prerequisite to Economics 2. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)

* On sabbatical leave winter term 1950-51.

† Economics 1-2 is prerequisite to all other courses in economics.

Economics 1x—same as Economics 1, but offered winter term. Morning and evening sections.

Economics 2x—same as Economics 2, but offered fall term. Morning and evening sections.

SECOND GROUP*

- 101 *Economic Theory* (3) The Staff
Introduction to formal economic theory; advanced analysis of demand, supply, and price relations. Morning and evening sections. (Also offered 1950 summer term.)
Economics 101x—same as Economics 101, but offered winter term. Morning and evening sections.
- 102 *History of Economic Thought* (3) Burns
Economic doctrines since the mercantilist writers; the history of the major schools of thought; influence of changing problems on theory. Morning. (Also offered 1950 summer term.)
- 105 *Business Cycles* (3) Burns, Miller
Analysis of strategic factors in economic instability and economic retardation; survey of recent business-cycle theories. Morning.
Economics 105x—same as Economics 105, but offered winter term. Evening.
- 108 *The National Income* (3) Miller
The measurement, composition, and determinants of the national income. Morning.
- 109 *Distribution Theory and Welfare Economics* (3) Miller
Advanced economic theory with emphasis on income distribution and the literature on welfare economics. Prerequisite: Economics 101 or the equivalent.
Summer term 1950.
- 121 *Money and Banking* (3) Acheson
Theory of money, credit, and banking; commercial banking and the Federal Reserve system; other financial institutions; international aspects of money; current financial problems. Morning and evening sections. (Also offered 1950 summer term.)
Economics 121x—same as Economics 121, but offered winter term. Evening.
- 122 *The Supply and Control of Money* (3) Acheson
Factors determining the effect of bank policy and government finance on the volume of purchasing power and level of prices; historical development; current practice and problems. Prerequisite: Economics 121. Morning.
- 123 *Monetary Theory* (3) Acheson
Principal contemporary theories; background of recent monetary policy. Prerequisite: Economics 121. 1951-52 and alternate years, evening.

* Economics 1-2 is prerequisite to all other courses in economics.

- 126 *Foreign Exchange and International Finance* (3) Acheson
Theory and practice of foreign exchanges; the gold standard and international finance during the nineteenth century; war and postwar exchange problems. Prerequisite: Economics 121. Evening.
- 141 *Labor Economics* (3) Miller
Labor problems: wages, hours, and working conditions; growth of labor organizations; types of unions; union tactics and programs. Morning and evening sections.
- 142 *Government and Labor Problems* (3) Miller
Labor legislation; labor and the courts; federal regulation of capital-labor relations; the work of federal labor boards. Morning and evening sections.
- 144 *Labor Movements* (3)
Survey of growth and types of labor unions, development and problems of collective bargaining.
Summer term 1950.
- 146 *Economic Security and Social Insurance* (3) Hanchett
Economic and social problems of unemployment; analysis of the federal social security program; survey of the Beveridge and other plans.
Summer term 1950.
- 161-62 *Public Finance and Taxation* (3-3) Hanchett
General survey of government expenditures, sources and methods of taxation, economic effects of expenditures and taxes, and of government debt policies. Late afternoon.
- 165 *Government Control of Economic Activity* (3) Watson
Changing role of government in promoting and regulating economic activity; types and spheres of control. Morning.
- 166 *Comparative Systems of Economic Reform* (3) Watson
Critical analysis of the major theories of economic and social reform, with special attention to their origins and backgrounds.
Summer term 1950.
- 167 *Economics of Planning* (3) Watson
Analytical comparison of economic systems coordinated by market price with those coordinated by central authority. (Not offered in 1950-51.)
- 172 *Public Utilities* (3)
The economics of public utilities with emphasis on regulation, valuation, and rate-making. Evening.
- 175 *Railroad Transportation* (3) Kennedy
Railroad history, organization, rate-making theory and practice, with emphasis on the work of the Interstate Commerce Commission. Morning.

- 176 *Motor, Air, and Water Transportation* (3) Kennedy
History, organization, competition, rates, and regulation of motor, air, and water carriers; coordination of transportation. Morning.
- 181-82 *International Economics* (3-3) Schmidt
Survey of world economics; basic factors; resource controls; international trade; industrial, financial, and monetary processes and policies; relation to internal economic systems. Afternoon and evening sections. (Also offered 1950 summer term.)
- 183 *Tariffs and Commercial Treaties* (3) _____
Origins and types of modern foreign commercial policy, in the light of evolving doctrines; forms and economic effects of tariffs and other measures, and of international commercial accords. Evening.
- 184 *The New Foreign Economic Policies* (3) _____
The new types of foreign trade and exchange controls and agreements; causes, growth, and techniques. Evening.
- 185-86 *Economic History and Problems of South America* (3-3) Corliss
Economic development of South America (excluding Colombia and Venezuela). Particular emphasis on economic developments and problems since the First World War. 1950-51 and alternate years, evening.
- 187-88 *Economic History and Problems of the Caribbean Area* (3-3) Corliss
Economic developments of Colombia, Venezuela, Mexico, and the Central American and West Indian republics. Particular emphasis on economic developments and problems since the First World War. 1951-52 and alternate years, evening.
- 193-94 *Proseminar in Latin American Civilization and Culture* (3-3) Corliss
Coordination and review course. Open only to candidates majoring in Latin American Civilization and Culture. Time to be arranged.
- 198 *Readings in Economics* (3) Burns, Watson
Comprehensive survey of economics. Open only to students whose major is economics and who are in their last term. Time to be arranged.
Economics 198x—same as Economics 198, but offered fall term. Time to be arranged.

THIRD GROUP

- 201-2 *History and Literature of Economic Thought* (3-3) Burns
Critical analysis and interpretation of the development and the literature of economic thought; origins and problems of the major types of theory; their relation to present problems and policies. Evening.

- 203 *Partial Equilibrium Theory* (3) Watson
The contributions of Marshall, Chamberlin, and Robinson. Evening.
- 204 *Contemporary Economic Theory* (3)
Intensive analysis of Hicks' *Value and Capital*. Prerequisite: Economics 201-2. Evening.
- 205 *Business Cycle Theory* (3) Watson
The contributions of the pre-Keynesian writers.
Summer term 1950.
- 206x *Theory of Employment and Income* (3) Miller
Analysis of several types of current business-cycle theories; recent works of Keynes and others. Evening.
- 208 *The National Income* (3) Jaszi
The theory of economic aggregates; policy aspects of national income. Evening.
- 209 *Readings in the History of Economic Thought* (3) Burns
Research in special problems in the history of economics. Prerequisite: Economics 201-2. Evening.
- 210 *Methodology in Economics* (3) Burns
The nature of economic theory; relations of economics to philosophy and other disciplines. (Not offered in 1950-51.)
- 211 *Readings in Advanced Economics* (3) The Staff
Integration and coordination of advanced economic theories. Evening.
- 214 *Quantitative Economics* (3) Hanchett
Introduction to mathematical economic theories.
Summer term 1950.
- 223 *Monetary Policy and Problems* (3) Young
The money system in its relation to national income and to the national debt. Policy issues. Evening.
- 224 *Central Banking* (3) Young
The Federal Reserve and other central banking systems. Evening.
- 225 *Economic Stabilization Policies* (3) Burns
Appraisal of economic policies directed towards the stabilization of the economy, with special attention to the problem of full employment.
Summer term 1950.
- 241 *Labor Economics* (3) Fitch
Analysis of labor problems, with special reference to labor organizations; intensive study of federal regulation and participation in capital-labor relations. Evening.
- 244 *Labor Relations* (3) Fitch
The collective bargaining contract and the elements comprising it; analysis of the policies of labor and of management. Evening.

- 260 *Theory of Public Finance* (3) Hanchett
Survey of the literature on public finance, with special attention to controversial issues.
Summer term 1950.
- 261-62 *Public Finance and Fiscal Policy* (3-3) Colm
Survey of the major contributions to the theory and doctrines of public finance. Special problems: deficit financing; current tax problems; and federal, state, and local financial relationships. Evening.
- 265 *Theory of Economic Policy* (3) Ensley
The nature, forms, methods, and objectives of economic policy; the relation of economic theory to economic policy. Evening.
- 266 *Problems of Governmental Economic Policy* (3) Ensley
The execution of economic policies as they are affected by the processes of government. Evening.
- 281 *Theories of International Economics* (3) _____
Examination and critique of mercantilism, classical international equilibrium analysis, and other schools of world economic thought. Evening.
- 282 *The Balance of International Payments* (3) _____
Structure and theories of the balance; money and foreign exchange and interrelationships of trade, gold flows, capital movements, etc.; the balance and foreign economic policy formulation. Evening.
- 285-86 *Public and Private Finance in Latin America* Corliss
(3-3)
Corporate finance, banking, and capital movements in Latin America; fiscal problems; public debt, deficit financing, taxation, public expenditures; foreign-exchange controls and problems. A reading knowledge of Spanish or Portuguese is required. Evening.
- 287-88 *Economic Problems of Latin America* (3-3) Corliss
Foreign trade and foreign commercial policy; growth of industry and agriculture; government control of economic activity; recent economic trends and problems. (Not offered in 1950-51.)
- 289 *Problems in International Financial Policy* Acheson
(3)
Analysis of the issues confronting the International Monetary Fund and the International Bank for Reconstruction and Development. Evening.
- 290 *Problems in International Economic Policy* Acheson
(3)
Exchange stabilization; issues confronting the International Trade Organization. Evening.
- 297-98 *Thesis* (School of Government majors) (3-3) The Staff
- 299-300 *Thesis* (3-3) The Staff

EDUCATION

James Harold Fox, A.M., Ed.D., *Professor of Education, Executive Officer*

Burnice Herman Jarman, A.M., Ed.D., *Professor of Education*

William Cullen French, Ph.D., *Professor Emeritus of Education in Residence*

Meredith Chester Wilson, B.S., *Adjunct Professor of Education*

Ruth Coyner Little, Ph.D., *Professorial Lecturer in Education*

*Ray LaForest Hamon, Ph.D., *Professorial Lecturer in Education*

Charles Edward Bish, A.M., Ed.D., *Professorial Lecturer in Education*

Henry Fred Alves, A.M., *Professorial Lecturer in Education*

Blake Smith Root, A.M., Ed.D., *Associate Professor of Education*

Ralph Windsor Ruffner, A.M., Ed.D., *Associate Professor of Education*

Jane Frost Hilder, A.M., *Lecturer in Education, Director of Reading Clinic*

*Madaline Kinter Remmlein, Ph.D., J.D., *Lecturer in Education*

LuVerne Crabtree Walker, A.M., *Lecturer in Education*

Helen Barton Goodwin, A.M., *Lecturer in Education*

Camilla Painter Luecke, A.M., *Lecturer in Education*

Florence Mary Lumsden, A.M., Ed.D., *Lecturer in Education*

William Samuel Rumbough, A.M., Ed.D., *Lecturer in Education*

Cannon Chiles Hearne, A.M., *Lecturer in Education*

Juanita May Winn, A.M., *Lecturer in Education*

Joseph Bueol Johnson, A.M., Ed.D., *Lecturer in Education*

James Herrick Hall, A.M., *Lecturer in Education*

John Frederick Brougher, A.M., Ed.D., *Lecturer in Education*

Howard Odin Johnson, A.M., Ed.D., *Lecturer in Education*

Marie Marguerite Neeb, A.M., *Clinician, Reading Clinic*

CONSULTANT IN RESEARCH

Wesley Earl Armstrong, Ed.D., *Chief for Teacher Education, U. S. Office of Education*

FIELD SERVICE COORDINATORS

William Wallace Rich, A.M., *Supervisor of Secondary Schools, Arlington County, Virginia*

Helen King Finlay, A.M., *Assistant Principal, Washington-Lee High School, Arlington, Virginia*

Minimum requirements for the degrees.—See pages 131 and 135-38.

* On leave of absence 1950-51.

A Reading Clinic

Hilder and Staff

Diagnosis of reading difficulties; individual or group lessons without academic credit for alexia, dyslexia, and remedial cases. Fee: for diagnosis, \$20; for individual lesson, \$3; for group lesson, \$2.50.

SECOND GROUP

- 107 *Introduction to Learning and Teaching* (2) Indorf
Child growth and development, nature of learning and teaching, principles of teaching. For liberal arts graduates who have had no equivalent professional training.
Summer term 1950.

- 108 *The Elementary School* (3)
Purposes, organization, program of studies, and general problems of the elementary school. For liberal arts graduates and graduates of secondary school curricula.
Summer term 1950.

- 109-10 *Learning and Teaching* (3-3) Ruffner
For the general student as well as the prospective teacher. Fall term: nature of learning and teaching approached through the study of actual classroom situations. Winter term: the principles and practices of good teaching. Lecture (2 hours)—morning and evening sections; field work (2 hours)—to be arranged. (Also offered 1950 summer term—Ruffner, Hall.)

- 111-12 *Elementary School Curriculum* (3-3)
Fall term: language skills—reading, writing, spelling, speaking, listening. Winter term: Natural and social sciences, arithmetic. Lecture (2 hours)—late afternoon; field work (2 hours)—to be arranged. (Also offered 1950 summer term.)

- 113 *Elementary School Art* (3)
Materials and methods. (Not offered in 1950-51.)

- 114 *Elementary School Music* (3)
Materials and Methods. (Not offered in 1950-51.)

- 115 *Elementary School Classroom Procedures* (3) Barnes, Winn
Determination of children's needs and interests, providing for individual differences, evaluation of classroom practices.
Summer term 1950.

- 121-22 *Society and the School* Jarman, Hall, _____
(3-3)
For the general student as well as the prospective teacher. Fall term: the local, national, and international roles of education; cooperation of the school with other community agencies. Winter term: organization and operation of schools; principles and functions. Lecture (2 hours)—morning and evening sections; field work (2 hours)—to be arranged. (Also offered 1950 summer term.)

- 123-24 *Reading Problems* (3-3) Hilder
A clinical approach to reading difficulties on elementary and secondary school levels. Saturday morning.

- 125 *Corrective Procedures in Reading* (3) Hilder
Study of levels, needs, materials, and corrective methods. Demonstrations and observations with clinic cases.
Summer term 1950.
- 127 *Children's Literature* (3) Walker
Exploring and evaluating the newer books for children and the children's classics, understanding the contribution of literature in child development, appreciating children's original expressions. Lecture (2 hours)—evening; field work (2 hours)—to be arranged.
- 131 *Common Teaching Skills* (3) Root, Hall
Course, unit, and lesson planning; homeroom procedures; discipline; clerical routines; activity sponsorship; committee procedures; public relations duties. Afternoon and evening sections.
- †133-34 *Observation and Practice Teaching* (3-3) Root, Hall
Education 134, practice-teaching fee, \$8 a credit hour. Admission by permission of the instructor. Time to be arranged individually. (Also offered 1950 summer term.)

SPECIAL METHODS COURSES

To be elected in the senior year after substantial preparation in the teaching fields concerned. Course requirements and hours of credit vary with license requirements. Practices of successful teachers are studied and actual teaching content as found in current texts and courses of study is reviewed.

- 136 *Teaching English* (2 to 4) Lumisden
Lecture (2 hours)—evening; field work (2 hours)—to be arranged.
- 138 *Teaching Social Studies* (2 to 4) Root
Lecture (2 hours)—evening; field work (2 hours)—to be arranged.
- 140 *Teaching Mathematics* (2)
(Not offered in 1950-51.)
- 141-42 *Teaching Art* (3-3) Goodwin
Saturday Morning.
- 144 *Teaching Science* (2 to 4) Rumbough
Lecture (2 hours)—late afternoon; field work (2 hours)—to be arranged.
- 146 *Teaching Foreign Languages* (2 to 4) Doyle, Keating
Late afternoon.
- 148 *Teaching Home Economics* (2) Kirkpatrick
Time to be arranged.
- 150 *Teaching Secretarial Studies* (2) Veon
Time to be arranged.

THIRD GROUP

- 205-6 *The Curriculum* (3-3)
General principles and practices of curricular development, modern trends and procedures of improvement, group consideration of student problems. Saturday morning.

- 209-10 *Child Growth and Development* (3-3)
Basic factors in human growth and development and their relation to learning and teaching. Related practical experience in studying children; class analyses of procedures and results. Evening. (Also offered 1950 summer term—Education 209 (3).)
- 211x *Evaluation in Education* (3) Ruffner
Nature, functions, and techniques. Evening. (Also offered 1950 summer term.)
- 213-14 *History of Education* (3-3) Jarman
Fall term: the European backgrounds of American education. Winter term: the evolution of the American school system. Evening.
- 215-16 *Seminar: Great Teachers in American Education* (3-3) French
A study of great teachers from the colonial period to the present. An attempt will be made to find out the qualities and characteristics that have made these teachers great. Evening.
- 217-18 *Contemporary Problems in Education* (3-3) Jarman
Fall term: designed to help students formulate a personal philosophy of education. Winter term: a study of the forces that shape the policies and offerings of the school. Evening. (Also offered 1950 summer term—Education 218 (3).)
- 219 *Elementary Education* (3)
Review of recent literature and practices; particular attention to *Education for All American Children*, the recent report of the Educational Policies Commission.
Summer term 1950.
- 221-22 *Seminar: Early Childhood Education* (3-3) Little
Fall term: home backgrounds, nursery school, and kindergarten situations. Winter term: primary grades. Evening.
- 225-26 *Seminar: Elementary Education in the Intermediate Grades* (3-3) Little
A comprehensive study of the major problems of the intermediate grades. (Not offered in 1950-51.)
- 227-28 *Elementary Education* (3-3)
Fall term: discussion of fundamental issues in the light of their historical development, parallel situations in other countries, and current proposed solutions. Winter term: relationships of developments in each instructional area to the fundamental issues. Saturday morning.
- 230 *Administration of Elementary Education* (3)
The principal as a school and community leader. Problems of supervision, course of study development, parent relations. Evening.
- 231 *Secondary School Classroom Procedures* (3) Bish, Root
Survey of current classroom practices with particular attention to teaching aids; reviews of recent literature. Evening. (Also offered 1950 summer term.)

- 233 *Audio-visual Education* (3) Luecke
Selection and use of audio-visual aids, management of materials and equipment. Material fee, \$5. Lecture (2 hours), laboratory (2 hours)—Saturday morning. (Also offered 1950 summer term—Johnson.)
Education 233x—same as Education 233, but offered winter term. Saturday morning.
- 247-48 *Vocational Education* (3-3) Ruffner, Johnson
Major issues, problems, and trends. Evening.
- 251 *Guidance in Secondary Schools* (3) Brougher
Scope; needs; organization of the program; services to students, the instructional staff, and the administration; personnel needed for the program. Evening. (Also offered 1950 summer term.)
- 254 *The Junior High School* (3) Bish, Root
Purposes, organization, core programs, guidance, developing courses of study, extra classroom activities. Evening. (Also offered 1950 summer term.)
- 255-56 *Secondary Education* (3-3) Bish, Root
Fall term: review of recent literature and practices; particular attention to *Education for All American Youth*, the recent report of the Educational Policies Commission, and *General Education in a Free Society*, Harvard Committee. Winter term: current problems in each of the subject-matter fields. Saturday morning. (Also offered 1950 summer term.)
- 259-60 *Secondary School Management* (3-3) Fox, Johnson
Management planning, execution, and control; criteria of good management; construction of the master schedule; leadership problems incident to the development of new policies and programs. Saturday morning.
- 263-64 *Employee Training* (3-3) Root
Organization and administration of employee-training programs in accordance with operating needs; orientation, supervisory, and skills training; coordination of training with other personnel functions. evaluation of training. Field work is required. Evening.
- 271 *The American School System* (3) Fox
Organization of public education, sources of school revenue, influences of national and state agencies, local administrative units, the chief legal controls, criteria of building administration, responsibilities of teachers. Evening.
- 272 *The Teacher and School Supervision* (3) Fox
Nature, organization, human relationships, and techniques. Evening.
(Also offered 1950 summer term.)
- 273-74 *Administration of a School System* Alves, ———
(3-3)
A comprehensive survey of the management problems of a beginning superintendent; does not anticipate previous experience as a superintendent. Evening.

- 275 *School Finance* (3) Alves
Educational financial theory, practice, and control, including methods of financing. (Not offered in 1950-51.)
- 276 *Seminar: Public Relations in School Administration* (3) Fox
Purposes, gathering materials, disseminating agencies, publicity media, public participation in policy-making. (Not offered in 1950-51.)
- 278 *School Law* (3) Remmlein
Sources and scope of school law; legal rights and responsibilities of teachers, pupils, and taxpayers. Other legal problems of major interest to the group. (Not offered in 1950-51.)
- 279-80 *Adult Education* (3-3) Ruffner
Fall term: nature, extent, and organization of programs in adult education. Winter term: interest, needs, and capacities of adult learners; techniques employed in motivating and directing learning activities. Evening. (Also offered 1950 summer term—Education 279 (3).)
- 285 *Extra-classroom Activities* (3) Root
Home-room functions, student self-government, clubs, assemblies, school publications. Summer term 1950.
- 287-88 *Clinical Study of Reading Problems* (3-3) Hilder
For advanced students. Diagnostic work under supervision in the Reading Clinic. Admission by permission of the instructor. Saturday morning.
- 291 *Planning the School Plant* (3) Hamon
Selection of sites; evaluation of existing buildings; utilization of present facilities; adaptation to curricular needs; building, operation, and maintenance problems. (Not offered in 1950-51.)
- 293-94 *Research* (3-3) The Staff
Individual research under the guidance of a member of the staff. Program and conferences arranged with an instructor.
- 295 *Educational Research Methods and Procedures* (3) Fox
Required of all Master of Arts candidates following Plan 2. Knowledge of elementary statistics required. Evening. (Also offered 1950 summer term.)
Education 295x—same as Education 295, but offered winter term. Late afternoon.
- 297 *Reading in Education* (1) The Staff
To assist those preparing for the comprehensive examination. No credit toward degree requirements. Late afternoon. (Also offered 1950 summer term.)
Education 297x—same as Education 297, but offered winter term. Late afternoon.
- 299-300 *Thesis* (3-3) The Staff
Required of all Master of Arts candidates following Plan 1. Time to be arranged. (Also offered 1950 summer term.)

ELECTRICAL ENGINEERING

Norman Bruce Ames, M.S., E.E., LL.B., *Professor of Electrical Engineering, Executive Officer*
 Forest Klaire Harris, Ph.D., *Professorial Lecturer in Electrical Engineering*
 William Sutton Carley, M.S. in E.E., *Associate Professor of Electrical Engineering*
 William Thomas Dickinson, M.S. in E.E., *Assistant Professor of Electrical Engineering*
 Jerome Strauss Antel, Jr., B.S. in E.E., *Assistant Professor of Electrical Engineering*
 Thomas Alvin O'Halloran, B.E.E., *Lecturer in Electrical Engineering*
 Dwight Edward Shytle, *Lecturer in Electrical Engineering*
 Malcolm Richardson Moore, B.E.E., *Lecturer in Electrical Engineering*
 Ralph Brady, B.S. in E.E., *Lecturer in Electrical Engineering*
 Jerome Addison Lee, B.S., *Lecturer in Electrical Engineering*
 George Pida, B.E.E., *Associate in Electrical Engineering*

Minimum requirements for the major.—See pages 111-12, 114-15.

FIRST GROUP

- 9-10 *Elements of Electrical Engineering* (3-3) Ames, Lee
 Electrical Engineering 9: magnetic and electric circuits; direct-current instruments and machines; Electrical Engineering 10: alternating-current circuits, instruments, and machines. Prerequisite: Physics 7. Prerequisite or concurrent registration: Mathematics 20. Morning and evening sections. (Also offered 1950 summer term.)
- 13-14 *Electrical Laboratory* (2-2) The Staff
 For the student not majoring in electrical engineering. Experiments in direct- and alternating-current circuits, instruments and machinery. Prerequisite: Electrical Engineering 10. Laboratory fee, \$6 a term. Laboratory (3 hours)—afternoon and evening sections. (Also offered 1950 summer term.)

SECOND GROUP

- 105-6 *Direct-Current Laboratory* (2-2) The Staff
 For the student majoring in electrical engineering. A course in measurements and direct-current dynamo laboratory. Prerequisite: Electrical Engineering 9-10. Laboratory fee, \$6 a term. Laboratory (3 hours)—afternoon and evening sections. (Also offered 1950 summer term.)
- 107 *Alternating-Current Circuits* (3) Dickinson
 Alternating-current-circuit theory. Extensive consideration is given

to harmonic analysis and to the study of harmonics in both single-phase and polyphase circuits. Prerequisite: Electrical Engineering 10. Morning and evening sections.

- 108 *Alternating-Current Machinery* (3) Antel
Synchronous generators and motors, transformers, and mercury arc rectifiers. Prerequisite: Electrical Engineering 107. Morning and evening sections.

- 109 *Alternating-Current Machinery* (3) Antel
A continuation of Electrical Engineering 108. Converters, induction motors, single-phase motors. Prerequisite: Electrical Engineering 108. Afternoon and evening sections.

- 111-12 *Electrical Measurements* (2-2) Antel, Harris
Theory of direct-current and alternating-current instruments, bridges, and meters. Prerequisite or concurrent registration: Electrical Engineering 107. Morning and evening sections.

- 118 *Advanced Network Theory I* (3) Carley, Dickinson
Theory of resonance, linear networks, transmission lines, and filters. Prerequisite: Electrical Engineering 107. Morning and evening sections.

- 119 *Advanced Network Theory II* (3) Carley
Theory of transmission at UHF and VHF frequencies including Maxwell's equations, wave guides, and methods of power generation at these frequencies. Prerequisite: Electrical Engineering 118 and Physics 132. Prerequisite or concurrent registration: Electrical Engineering 142; Physics 133. Morning and evening sections.

- 120 *Advanced Network Laboratory I* (2) The Staff
A laboratory course associated with Electrical Engineering 118. Laboratory fee, \$6. Laboratory (3 hours)—morning and evening sections.

- 121 *Advanced Network Laboratory II* (2) The Staff
A laboratory course associated with Electrical Engineering 119. Prerequisite: Electrical Engineering 120. Laboratory fee, \$6. Laboratory (3 hours)—afternoon and evening sections.

- 125-26 *Principles of Electric Power Transmission* (2-2)
Mechanical and electrical characteristics of transmission lines, approximate and rigorous solutions by means of hyperbolic functions, steady-state and elementary transient considerations, the more important phases of distribution of electrical energy. Prerequisite: Electrical Engineering 107. Evening.

- 133-34 *Alternating-Current Laboratory* (2-2) The Staff
A continuation of Electrical Engineering 105-6, with experiments on alternating-current circuits, instruments, and machinery. Prerequisite: Electrical Engineering 106 and 108. Laboratory fee, \$6 a term. Laboratory (3 hours)—afternoon and evening sections. (Also offered 1950 summer term.)

- 137 *Electric Traction* (2) Ames
Theory and practice of modern direct- and alternating-current rail-
ways. Prerequisite: Electrical Engineering 10. Evening.
- 138 *Industrial Electrical Power Applications* (2) _____
The characteristics of the various types of electrical motors and other
power appliances and the principles governing their applications in
industry. Prerequisite: Electrical Engineering 10. Evening.
- 139 *Illumination Engineering* (2) _____
Principles and practices in present-day illumination engineering. Pre-
requisite: Electrical Engineering 10. Evening.
- 140 *Electrical Design* (3) Ames
Principles of design, with reference to materials of construction and
electrical equipment. Practical exercises are assigned in connection
with classroom work. Prerequisite: Electrical Engineering 109. Lec-
ture (2 hours); laboratory (3 hours)—morning and evening sections.
- 142x *Radio-wave Propagation* (3) Carley, Dickinson
Theory of the radiation and propagation of electromagnetic waves
in space, with consideration of practical application to radio problems.
Prerequisite: Electrical Engineering 118. Morning and evening sec-
tions.
- 148 *Applications of Electronic Devices* Carley, Dickinson
(3)
Practical applications of electronic devices such as power supplies,
voltage regulators, multivibrators, electronic counters, and servo-
mechanism. Prerequisite: Physics 133. Evening.
- 150 *Electronic Devices Laboratory* (2) The Staff
A laboratory course associated with Electrical Engineering 148. Lab-
oratory fee, \$6. Evening.
- 189-90 *Proseminar in Electrical Engineering* (1-1) The Staff
Prerequisite: Electrical Engineering 108. Late afternoon.

ENGLISH

- Robert Whitney Bolwell, Ph.D., *Professor of American Literature*
 Ernest Sewall Shepard, A.M., *Professor of English Literature*
 *George Winchester Stone, Jr., Ph.D., *Professor of English Literature*
 Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
 Calvin Darlington Linton, Ph.D., *Professor of English Literature*
 Charles William Cole, Ph.D., *Associate Professor of American Literature, Executive Officer*
 William Lewis Turner, A.M., *Associate Professor of English*
 Robert Hamilton Moore, Ph.D., *Associate Professor of English Composition*
 Averett Howard, A.M., *Associate Professor of English Composition*
 Muriel Hope McClanahan, Ph.D., *Assistant Professor of English*
 James Harold Coberly, Ph.D., *Assistant Professor of American Literature*
 Martin Steele Day, Ph.D., *Assistant Professor of English*
 Phyllis Annette Nichols, A.M., *Assistant Professor of English*
 Vera Lillian Mowry, Ph.D., *Assistant Professor of English*
 †John Palmer Reesing, Jr., A.M., *Assistant Professor of English*
 John Gage Allee, Jr., A.M., *Assistant Professor of English*
 Russell Fessenden, Ph.D., *Lecturer in English Composition*
 Ruth Elsie Jones, A.M., *Instructor in English Composition*
 Carlton Ernest Brett, A.M., *Instructor in English Composition*
 Murray Hartman, M.S. in Ed., *Instructor in English Composition*
 Otho Thompson Beall, Jr., A.M., *Instructor in English Composition*
 Alice Sylvia Venezky, Ph.D., *Instructor in English Composition*
 Edith Louise Williams, A.M., *Instructor in English Composition*
 John Judson Monroe, A.M., *Associate in English Composition*
 Gordon Vanderlip Potter, A.M., *Associate in English Composition*

The major in English Literature (Field-of-Study).—The coordinated knowledge which a student must exhibit in the major in English Literature, and upon which he will be examined at the end of his senior year, is summarized under four general headings: (1) the history of English literature from the Anglo-Saxon period; (2) the chief English writers (a certain familiarity with each man and his main works and a detailed knowledge of Shakespeare); (3) English social and political history as it bears upon or is reflected in the literature; (4) European intellectual backgrounds and movements which have affected English literature. It is advised that the student planning to major in English literature elect English 91-92 as his sophomore course. For details, see the pamphlet which is available in the Office of the Dean of Columbian College.

The major in American Thought and Civilization (Field-of-Study).—For details, see the pamphlet which is available in the Office of the Dean of Columbian College and consult the adviser.

* On sabbatical leave 1950-51.
 † On leave of absence 1950-51.

ENGLISH COMPOSITION

FIRST GROUP

- A English Practice (3)** The Staff
Instruction, drill, and exercises in grammar, vocabulary, spelling, and mechanics in general; instruction and exercises in composition and reading. This course is designed to prepare students for English 1. Morning and evening sections. (Also offered 1950 summer term.)
- B English for Foreign Students (3)** Allee
A course in reading and writing designed to prepare the student for English 1. Special attention is given to spelling, syntax, grammar, idiom, and vocabulary. Evening. (Also offered 1950 summer term.)
- 1-2 Freshman English* (3-3)** Moore and Staff
Review of grammar, exercises in composition, readings. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)
English 1x—same as English 1, but offered winter term. Morning, afternoon, and evening sections.
English 2x—same as English 2, but offered fall term. Morning, afternoon, and evening sections.
- 9 Sophomore Composition (3)** Howard and Staff
A study of types of expository writing with weekly exercises. Prerequisite: English 1-2. Morning and evening sections. (Also offered 1950 summer term.)
English 9x—same as English 9, but offered winter term. Morning.
- 10 The Short Story (3)** Howard and Staff
Some study of the technique of the short story and class criticism of student writing. Prerequisite: English 1-2. Morning and evening sections. (Also offered 1950 summer term.)
English 10x—same as English 10 but offered fall term. Morning and evening sections.

SECOND GROUP

- 115 The Writing of Fiction—the Short Story (3)** Howard
Evening.
- 117-18 The Writing of Fiction—the Novel (3-3)** Howard
Writing a novel. Evening.

ENGLISH LITERATURE

FIRST GROUP

- 51-52 Introduction to English Literature (3-3)** The Staff
A historical survey. Prerequisite: English 1-2. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)
English 51x—same as English 51, but offered winter term. Morning and evening sections.
English 52x—same as English 52, but offered fall term. Morning and evening sections.

* Students registered in English 1 are tested in the minimum essentials of standard usage, vocabulary, writing skill, and reading speed and comprehension. Those students who show marked superiority may, upon passing of further tests, be exempted from one or both terms of the Freshman English course; those who show deficiencies will be assigned to English A.

91-92 *Introduction to European Literature* Shepard and Staff
(3-3)

Consideration of various types. Prerequisite: English 1-2. Afternoon and evening sections. (Also offered 1950 summer term.)

SECOND GROUP *

121-22 *English Literature from the Beginnings to 1500* (3-3) Allee

Fall term, English literature prior to Chaucer; winter term, Chaucer. Evening. (Also offered 1950 summer term—English 122 (3).)

125 *The Evolution of Modern Speech* (3) Allee

The development of the English language in a historical treatment of English grammar. Evening. (Also offered 1950 summer term.)

126 *The Appreciation of Literature* (3) Stone

The study of the principles of criticism and their application to various literary types.

Summer term 1950.

129-30 *Elizabethan Nondramatic Literature* (3-3) Tupper

Nondramatic literature from 1485 to 1603. Morning.

135-36 *Shakespeare* (3-3) Tupper

Morning.

139-40 *The Seventeenth Century* (3-3) Linton

First half, poetry and prose from 1603 to 1660; second half, Milton. Morning. (Also offered 1950 summer term—English 140 (3).)

141-42 *The Neoclassical Movement* (3-3) Stone

Poetry and prose from 1660 through the mid-eighteenth century. (Not offered in 1950-51.)

151-52 *The Romantic Movement* (3-3) Day

From the mid-eighteenth century through Shelley and Keats. Morning.

161-62 *Victorian Literature* (3-3) Shepard

Poetry and prose from 1830 to 1900. Morning. (Also offered 1950 summer term—English 162x (3).)

165-66 *The Twentieth Century* (3-3) Linton

British poetry, prose, and drama since 1900. Morning. (Also offered 1950 summer term—English 165x (3).)

181-82 *The English Novel* (3-3) Day

Major English novelists from Richardson to Woolf. Morning. (Also offered 1950 summer term—English 182 (3).)

* English 31-52, 71-72, or 91-92 is prerequisite to all second group courses except English 125 and 126.

- 183-84 *The English Drama* (3-3) Tupper
The first half is concerned principally with the drama of Shakespeare's contemporaries. The second half is a historical survey from 1660 to the present day. Evening.
- 199-200 *Proseminar: Readings for the English Literature Major* (3-3) Tupper, Linton
Conferences and group discussions. Afternoon and evening sections.

THIRD GROUP

- 201-2 *Methods and Materials in Elizabethan Research* (3-3)
Open only to the graduate student. Admission by permission of the instructor. (Not offered in 1950-51.)
- 222 *The Age of Chaucer* (3) Stone
Summer term 1950.
- 223-24 *Old English* (3-3) Allee
English language and literature before 1100. Fall term, Old English grammar and readings; winter term, Beowulf. Evening.
- 235-36 *Studies in Shakespeare and His Contemporaries* (3-3) Tupper
Prerequisite: English 135-36. (Not offered in 1950-51.)
- 239-40 *Studies in the Seventeenth Century* (3-3) Linton
Prerequisite: English 139-40. (Not offered in 1950-51.)
- 241-42 *Studies in Neoclassical Literature* (3-3) Stone
Prerequisite: English 141-42. (Not offered in 1950-51.)
- 244 *Studies in Eighteenth Century Drama* (3) Stone
(Not offered in 1950-51.)
- 251-52 *Studies in the Romantic Movement* (3-3) Day
Prerequisite: English 151-52. Evening. (Also offered summer term 1950-English 252 (3).)
- 261-62 *Studies in Victorian Literature* (3-3) Shepard
Prerequisite: English 161-62. (Not offered in 1950-51.)
- 295-96 *History of English Literary Criticism* (3-3) Shepard
Open to the undergraduate with the approval of the instructor. Evening.
- 299-300 *Thesis* (3-3) The Staff

RELATED COURSES IN OTHER DEPARTMENTS

Classical Languages and Literatures 71-72, *Greek and Roman Backgrounds in Literature*
Education 136, *Teaching of English*
German 221, *Introduction to Linguistics*
History 151-52, *English History*
Philosophy 111-12, *History of Philosophy*

AMERICAN LITERATURE

FIRST GROUP

- 71-72 *Introduction to American Literature* Bolwell and Staff
(3-3)
A historical survey. First half: from the beginnings to the Civil War. Second half: from Civil War to the present day. Prerequisite: English 1-2. Morning and evening sections. (Also offered 1950 summer term.)

SECOND GROUP

- 171-72 *Studies in American Literature* (3-3) Cole
Major factors in the national cultural tradition as shown by outstanding writers. Prerequisite: English 51-52 or 71-72. Evening.
- 173-74 *Major American Poets* (3-3) Coberly, Cole
Advanced critical study of significant writers and movements. First half: from beginnings through nineteenth century. Second half: the twentieth century. Prerequisite: English 51-52, 71-72, or 91-92. Morning. (Also offered 1950 summer term—English 173 (3).)
- 175-76 *American Drama* (3-3) Cole, Bolwell
Historical and critical study of significant plays and forms. First half: from beginnings through nineteenth century. Second half: the twentieth century. Prerequisite: English 51-52, 71-72, or 91-92. Morning. (Also offered 1950 summer term—English 176 (3).)
- 177-78 *American Fiction* (3-3) Coberly
Historical and critical study of significant novels and short stories. First half: from beginnings through nineteenth century. Second half: the twentieth century. Prerequisite: English 51-52, 71-72, or 91-92. Evening. (Also offered 1950 summer term—English 177 (3).)
- 179-80 *Proseminar: Readings for American Thought and Civilization Major* (3-3) The Staff
Conferences and group discussions. Afternoon and evening sections.

THIRD GROUP

- 271-72 *Seminar: American Literature* (3-3) Bolwell
Prerequisite: English 171-72 or the equivalent. Evening.
- 277-78 *Studies in American Fiction* (3-3) Coberly
Topic: Nineteenth Century Transcendentalism. Prerequisite: English 177-78 or the equivalent. Evening.
- 279-80 *Thesis* (3-3) The Staff

GEOGRAPHY

Robert Dale Campbell, Ph.D., *Associate Professor of Geography, Executive Officer*

William Franklin Jewell III, M.S., *Assistant Professor of Geography*

Walter Hall Bailey, A.M., *Assistant Professor of Geography*

*William Adriance Withington, A.M., *Instructor in Geography*

The major in Geography (Departmental).—Prerequisite: Geography 51 and 52. Required: twenty-four credit hours of Geography (which must include Geography 103-4 and 113-14) beyond first-group courses; fifteen credit hours in one or more of the following departments: Botany, Geology, Economics, History, or Political Science. Strongly recommended: Botany 1 and 2, Economics 1 and 2, and History 71-72.

FIRST GROUP

- 51 *Introduction to Geography* (3) Campbell
A study of the attributes of place; patterns and associations of physical and cultural earth-features; the systematic appraisal of earth-man relationships. Morning. (Also offered 1950 summer term.)
Geography 51x—same as Geography 51, but offered winter term. Evening.

- 52 *Introduction to Earth Sciences* (3) Jewell
An introduction to the sciences dealing with the physical earth: the lithosphere, the hydrosphere, and the atmosphere. Morning. (Also offered 1950 summer term.)
Geography 52x—same as Geography 52, but offered fall term. Evening.

SECOND GROUP

- 103-4 *Cartography* (3-3) Jewell
Principles of cartographic drafting; elementary map projections; map and graph planning, design, and construction; uses and interpretation of maps. Prerequisite: Geography 51 and 52. Laboratory fee, \$3 a term. Lecture (2 hours); laboratory (4 hours). Morning and evening sections.

- 113 *Geomorphology* (3) Bailey
The nature and evolution of earth forms, with special emphasis upon relief features of North America. Prerequisite: Geography 52. Lecture (2 hours)—evening; field work (2 hours)—Saturday.

- 114 *Weather and Climate* (3) Bailey
Rudimentary atmospheric physics, air mass and frontal weather analysis, regional climatology. Prerequisite: Geography 52. Lecture (2 hours)—evening; laboratory and field work (2 hours)—Saturday.

* On leave of absence 1950-51.

- 122 *Political Geography* (3) Campbell
The effect of geographic factors upon the structure and growth of states and upon the relations between states. Prerequisite: Geography 51. Evening.
- 123 *Economic Geography* (3) Jewell
A study of man's economic activities as adjustments to the physical and cultural environments. Prerequisite: Geography 51. Evening.
- 125 *Trade and Transportation* (3)
The influence of geographic factors on the forms of transportation and upon trade routes. Prerequisite: Geography 51. 1951-52 and alternate years.
- 131 *Conservation of Natural Resources* (3)
Principles and problems of conservation of vital natural resources: soils, water, forests, minerals, fuels, wildlife. Prerequisite: Geography 51. 1951-52 and alternate years.
- 132 *Land Use* (3) Jewell
Principles of geographic area analysis and land planning. Field trips and field problems. Prerequisite: Geography 51 and 52. 1950-51 and alternate years, evening.
- 141 *Geography of Settlement* (3) Bailey
The study of the nature and form of settlement, and of population trends and patterns. Prerequisite: Geography 51. 1950-51 and alternate years, afternoon.
- 142 *Urban Geography* (3) Bailey
The study of the location, form, and function of cities. Prerequisite: Geography 51. 1950-51 and alternate years, afternoon.
- 161 *Geography of Soils* (3) Jewell
The physical nature, development, and world distribution of soils, soils and land use, current and future soil problems. Prerequisite: Geography 51 and 52. 1950-51 and alternate years, evening.
- 163 *World Climates* (3)
An analysis of climatic classifications; the study of distribution of world climates and their geographic significance. Prerequisite: Geography 114.
Summer term 1950.
- 171-72 *Field Geography* (3-3) Bailey
Field study methods, training in mapping and analysis techniques for both rural and urban areas. Prerequisite: Geography 51 and 52. Fee, \$10 a term. Field trips (6 hours). Afternoon.
- 181 *Anglo-America* * (3) Jewell
1950-51 and alternate years, evening.

* Regional survey. No prerequisite.

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|-----|---|----------|
| 182 | <i>Historical Geography of the United States</i> * (3)
1950-51 and alternate years, evening. | Campbell |
| 183 | <i>Northwest Europe</i> * (3)
1950-51 and alternate years, afternoon. | Bailey |
| 184 | <i>Mediterranean Region</i> * (3)
1950-51 and alternate years, afternoon. | Bailey |
| 191 | <i>Middle America</i> * (3)
1951-52 and alternate years. | |
| 192 | <i>South America</i> * (3)
1951-52 and alternate years. | |
| 195 | <i>Eastern and Southern Asia</i> * (3)
1951-52 and alternate years. | |
| 196 | <i>Southwestern Asia and Soviet Union</i> * (3)
1951-52 and alternate years. | |

THIRD GROUP ‡

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| 201-2 | <i>Seminar: History and Philosophy of Geography</i> (3-3)
Required of the Master of Arts candidate. Time to be arranged. | Campbell |
| 215 | <i>Geographic Factors in American Foreign Policy</i> (3)
Summer term 1950. | Koenig |
| 218 | <i>Regional Planning</i> (3)
A survey of national and local resource utilization programs, the history of planning, the role of geography in land planning activities. 1951-52 and alternate years. | |
| 231-32 | <i>Seminar in Geography</i> (3-3)
Subjects of immediate interest for students of geography and professional geographers in the Washington area.
Summer term 1950: <i>Geography of Recreation and Geography of the Oceans</i> . | The Staff |
| 251-52 | <i>Seminar: Problem Areas of the World</i> (3-3)
Summer term 1950—Geography 251 (3). | |
| 295-96 | <i>Research</i> (3-3)
Special directed studies. Time to be arranged. | The Staff |
| 299-300 | <i>Thesis</i> (3-3)
Time to be arranged. (Also offered 1950 summer term.) | The Staff |

* Regional survey. No prerequisite.

‡ Senior major or graduate status is required for registration in any third-group course.

GEOLOGY

_____, *Associate Professor of Geology*

_____, *Instructor in Geology*

Minimum requirements for the major (Departmental).—Twenty-four credit hours of geology beyond the first-group courses.

FIRST GROUP

5 *Field Geology* (6)

Field trips to neighboring localities of geological interest, with classroom study. (Not offered in 1950-51.)

21-22 *Physical and Historical Geology* (3-3)

Survey course covering the principles of physiography, geology, and mineralogy. (Not offered in 1950-51.)

SECOND GROUP

121-22 *Paleontology* (3-3)

Lectures and laboratory work on classification and structure of fossil invertebrates, vertebrates, and plants, including their use as guide fossils in stratigraphic geology. (Not offered in 1950-51.)

123-24 *Regional Geology of North and South America* (3-3)

Lectures and map work on the physiographic regions of the Western Hemisphere, stressing the relationship between geology and geography and culture. (Not offered in 1950-51.)

125-26 *Regional Geology of the Eastern Hemisphere* (3-3)

Alternating with Geology 123-24 and with it completing a survey of the world. (Not offered in 1950-51.)

THIRD GROUP

215-16 *Seminar* (3-3)

Detailed study and presentation by the class and instructor of some phase of geology with review of current literature. (Not offered in 1950-51.)

227-28 *Research*

Original work on individual problems, including a digest of the published record. (Not offered in 1950-51.)

299-300 *Thesis* (3-3)

(Not offered in 1950-51.)

GERMANIC LANGUAGES AND LITERATURES

*Edward Henry Sehrt, Ph.D., *Professor of German, Executive Officer*
 Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*
 Wolfram Karl Legner, Ph.D., *Associate Professor of German*
 Nicholas Trephon Cokenias, A.M., *Instructor in German*

Minimum requirements for the major in Germanic Languages and Literatures (Departmental).—Twenty-four credit hours of German beyond first-group courses.

FIRST GROUP

- †1-2 *First-year German* (3-3) Rogers, Legner, and Staff
 The essentials of German grammar; translation of easy prose. Morning afternoon, and evening sections. (Also offered 1950 summer term.)
 German 1x—same as German 1, but offered winter term. Morning.
 German 2x—same as German 2, but offered fall term. Morning.
- †3-4 *Second-year German* (3-3) Rogers, Legner, and Staff
 Selections from modern German prose; review of grammar. Prerequisite: German 1-2 or two years of high school German. Morning and evening sections. (Also offered 1950 summer term.)
 German 3x—same as German 3, but offered winter term. Morning.
 German 4x—same as German 4, but offered fall term. Morning.

SECOND GROUP

- †101-2 *Rapid Readings in Modern German Prose* (3-3) The Staff
 Morning and evening sections.
- †103-4 *Goethe's "Faust"* (3-3) Sehrt
 Time to be arranged.
- †105-6 *German Classicism* (3-3) Sehrt
 Particularly the works of Goethe and Schiller. (Not offered in 1950-51.)
- 109-10 *German Drama since 1800* (3-3) Sehrt
 Dramas of Kleist, Grillparzer, Hebbel, and Hauptmann. Time to be arranged.
- †111-12 *The German Romantic Movement* (3-3) Sehrt
 (Not offered in 1950-51.)
- †115-16 *Survey of German Literature* (3-3) Legner
 Time to be arranged.

* On sabbatical leave winter term 1950-51.

†121-22 *Conversation and Composition* (3-3) Rogers
Prerequisite: German 3-4 or the equivalent. Morning and evening sections.

†123-24 *The German "Novelle und Roman"* (3-3) Rogers
(Not offered in 1950-51.)

THIRD GROUP

†201-2 *Middle High German* (3-3) Sehrt
Evening.

†205-6 *Gothic* (3-3) Sehrt
Introduction to the comparative study of the Germanic Languages.
(Not offered in 1950-51.)

†209-10 *Old High German* (3-3) Sehrt
(Not offered in 1950-51.)

213-14 *Old Norse* (3-3) Sehrt
Evening.

†219-20 *Comparative Germanic Grammar* (3-3) Sehrt
(Not offered in 1950-51.)

LINGUISTICS AND COMPARATIVE PHILOLOGY

221 *Introduction to Linguistics* (3) Sehrt
Linguistics and comparative philology. Admission by permission of the instructor. (Not offered in 1950-51.)

222 *Indo-European Languages* (3) Sehrt
Application of the laws of sound change in language; origin and development of suffixes and inflections; syntax. (Not offered in 1950-51.)

†223-24 *Sanskrit* (3-3) Sehrt
Introduction to comparative Indo-European grammar. Evening.

299-300 *Thesis* (3-3) The Staff

HEALTH ADMINISTRATION

Daniel LeRay Borden, A.M., M.D., *University Surgeon, Director*
Luther Sheldon, Jr., M.D., *University Physician*
Sally Steele MacDonald, A.B., M.D., *Associate University Physician*
Robert Howe Harmon, A.B., M.D., *Associate University Physician*
Ronald Atmore Cox, A.B., M.D., *Associate University Physician (Eye)*
Richard Bernard Castell, A.B., M.D., *Associate University Physician*
Alfred Brigulio, M.D., *Associate University Physician*
David Davis, A.B., M.D., *Associate University Physician (Nose and Throat)*
Juanita Love, R.N., *Nurse*
Mabel Viola Taylor, R.N., *Nurse-Secretary*

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is, on the Campus, a Student Health Clinic open from 9:00 A.M. to 5:00 P.M., with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school;* (2) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each term; (5) the above regulations apply also during the summer term of the University.

The University is not responsible for injuries received in inter-collegiate or intra-mural games, or in any of the activities of the physical education departments.

* A charge of \$2 is made by the University if a student fails to appear for a physical examination during the period set for this purpose.

HISTORY

- Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*
 Alva Curtis Wilgus, Ph.D., *Professor of Latin American History*
 Wood Gray, Ph.D., *Professor of American History, Executive Officer*
 Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*
 Myron Law Koenig, Ph.D., *Professor of American History*
 H. F. Arthur Schoenfeld, A.M., *Professorial Lecturer on European Diplomatic History*
 Roderic Hollett Davison, Ph.D., *Associate Professor of European History*
 Ronald Bettes Thompson, A.B., *Assistant Professor of European History*
 Richard Catlin Haskett, A.M., *Assistant Professor of American History*
 Richard Marache Leighton, Ph.D., *Lecturer in History*

The major in History (Field-of-Study).—Prerequisite: History 39-40 and 71-72. The major is centered on the study of the rise, development and spread, and the continuing challenges of Western civilization, attested by a major examination. Under the guidance of an adviser the student will arrange his program in History to attain a balanced coverage of (1) the rise of civilization in Europe to the eve of the French Revolution, (2) the spread of Western culture throughout the world since the close of the fifteenth century, (3) the historic problems of modern industrial civilization from the beginnings of the Industrial Revolution, and (4) the relations of the major nations of Europe and America in their world setting since the Napoleonic Wars. A six-hour research seminar to give training in fundamental techniques is a required part of each major's program, and a proseminar (History 199-200) is offered as a means of integrating the student's understanding of the continuity of Western civilization. For details relating to the administration and content of the major, see the pamphlet on this subject, which is available in the offices of the Dean of Columbian College and the Executive Officer of the History Department.

FIRST GROUP

- 39-40 *The Development of European Civilization (3-3)* Kayser, Davison, Thompson
 Primarily for freshmen. Fall term: the political, social, economic, and cultural history of the Old World from ancient times to 1648. Winter term: from 1648 to the present. Morning and evening sections. (Also offered 1950 summer term.)
 History 39x—same as History 39, but offered winter term. Afternoon.
 History 40x—same as History 40, but offered fall term. Afternoon.
- 71-72 *The Development of the Civilization of the United States (3-3)* Koenig, Haskett
 Primarily for sophomores. Fall term: the political, social, economic,

and cultural forces of the United States in their world setting from 1492 to 1865. Winter term: from 1865 to the present. Morning and evening sections. (Also offered 1950 summer term.)

History 71x—same as History 71, but offered winter term. Afternoon.

History 72x—same as History 72, but offered fall term. Afternoon.

SECOND GROUP *

- 109-10 *The Civilization of the Ancient World* (3-3) Kayser
Fall term: the culture of Ancient Greece to the end of the Hellenistic period. Winter term: Roman culture from its beginnings to the fall of the Empire in the West. Morning.
- 119 *Intellectual History of Europe During the Middle Ages* (3) Kayser
A historical survey of the culture of Western Europe from the fall of the Roman Empire to the end of the thirteenth century. (Not offered in 1950-51.)
- 120 *Intellectual Aspects of the Renaissance and the Reformation* (3) Kayser
Aspects of the development of the modern mind approached through a study of the lives and contributions of outstanding personalities of the period. (Not offered in 1950-51.)
- 130x *Nationalism* (3) Kayser
The historical evolution of modern nationalism.
Summer term 1950.
- 145-46 *Russian History* (3-3) Thompson
Main currents in economic, social, and political developments and world relations. Fall term: from the rise of the Kievan state to the Revolution of 1917. Winter term: the Soviet period. Evening.
History 146x—same as History 146, but offered fall term. Morning.
- 147 *Economic History of Europe* (3) Leighton
A survey from ancient times to the present day. Evening.
- 148 *Oversea Expansion of Europe* (3) Leighton
International rivalries and the impact of European civilization in Africa and the Pacific basin since 1500, with emphasis on the nineteenth and twentieth centuries. Evening.
- 149-50 *European Diplomatic History* (3-3) Davison
Background of the European state system and of diplomatic practices and relations since the Congress of Vienna, with emphasis on the policies and actions of the great powers and their statesmen. Fall term to 1871, morning; winter term: since 1871, morning and evening sections. (Also offered 1950 summer term—History 150x (3).)

* History 39-40 is prerequisite to courses 109 through 133 and 103-04; History 71-72, in History 161 through 184.

- 151-52 *English History (3-3)* Haskett
A general survey course. Evening.
- 161-62 *Latin American History (3-3)* Wilgus
Development of political, economic, social, and institutional affairs of the Ibero-American colonies (fall term) and the period since independence (winter term). Evening. (Also offered 1950 summer term.)
History 161x—same as History 161, but offered winter term. Afternoon.
History 162x—same as History 162, but offered fall term. Afternoon.
- 163-64 *Current Latin American Problems (3-3)* Wilgus
Afternoon.
- 171-72 *Social History of the United States (3-3)* Gray
Daily life, institutions, intellectual and artistic achievements of the Agrarian Era, 1607-1861; and the Urban-Industrial Era, 1861 to the present time. Morning.
- 173 *Representative Americans (3)* Gray
A biographical approach to national history. Some fifty significant and pivotal personalities in the development of the United States in government, business, science, religion, journalism, the arts, and social reform. Evening. (Also offered 1950 summer term.)
- 174 *Economic History of the United States (3)* Gray
Main trends in the development of American agriculture, industry, and trade since 1607, with emphasis on tendencies and problems since the Civil War. Evening. (Also offered 1950 summer term.)
- 175-76 *Constitutional and Political History of the United States (3-3)* Haskett
The programs and conflicts of group interests in America within the legal and political framework. Fall term: to the Civil War; winter term: since the Civil War. Morning.
- 181-82 *Diplomatic History of the United States (3-3)* Merriman
Tendencies toward isolation, expansion, and collectivism; disputes with foreign countries and their settlement; and the activities of the American secretaries of state and diplomatic agents. Fall term: to 1871; winter term: since 1871. Morning and evening sections. (Also offered 1950 summer term.)
- 183 *Oversea Expansion of the United States (3)* Merriman
The political, economic, social, and cultural life of our outlying possessions. Morning.
- 184 *Canada and the United States (3)* Merriman
The historical background and main trends in the relationship of the two English-speaking peoples of North America. Morning.
- 191-92 *Current History (1-1)* Kayser
Contemporary events in their world setting. Afternoon.

- 193 *History of the Near East (3)* Davison
The Ottoman Empire and its successors, from the fall of the Byzantine Empire to the breakup of the Ottoman Empire. Morning.
- 194 *History of the Far East (3)* Thompson
The civilizations of China, India, and Japan, in their relations with the West. Morning.
- 199-200 *Proseminar: Reading for the History Major (3-3)* The Staff
Limited to majors in History. Readings and discussions on main trends in the history of Western civilization, including representative selections from the classics of historical literature. Evening. (Also offered 1950 summer term.)

THIRD GROUP *

- 241-42 *Conference Seminar in Recent European Diplomatic History (3-3)* Schoenfeld
Evening.
- 243-44 *Reading Course in Modern European History (3-3)* Davison
Primarily for graduate students. Time to be arranged.
- 245-46 *Seminar in Russian History (3-3)* Thompson
Evening.
- 247-48 *Reading Course in Russian History (3-3)* Thompson
Primarily for graduate students. Time to be arranged.
- 249-50 *Seminar in European Diplomatic History (3-3)* Davison
Afternoon. (Also offered 1950 summer term—History 249 (3).)
- 261-62 *Seminar in Latin American History (3-3)* Wilgus
Afternoon. (Also offered 1950 summer term—History 262 (3).)
- 265-66 *Reading Course in Latin American History (3-3)* Wilgus
Primarily for graduate students. Time to be arranged.
- 271-72 *Seminar in the Social History of the United States (3-3)* Gray
Afternoon. (Also offered 1950 summer term—History 272 (3).)
- 273-74 *Reading Course in American Social History (3-3)* Gray
Primarily for graduate students. Time to be arranged.

* Approval of the instructor is required for registration in each third-group course

- 275-76 *Seminar in American Political and Constitutional History (3-3)* Haskett
Evening.
- 277-78 *Reading Course in British and American Constitutional History (3-3)* Haskett
Primarily for graduate students. Time to be arranged.
- 281-82 *Seminar in the Diplomatic History of the United States (3-3)* Merriman
Afternoon. (Also offered 1950 summer term—History 281 (3).)
- 285-86 *Reading Course in the Diplomatic History of the United States (3-3)* Merriman
Primarily for graduate students. Time to be arranged.
- 287 *Conference Seminar on the Development of the Foreign Policy of the United States (3)* Schoenfeld
Evening.
- 291-92 *Seminar (3-3)* The Staff
Prerequisite: approval of the Department. Time to be arranged.
(Also offered 1950 summer term.)
- 299-300 *Thesis (3-3)* The Staff
Required of all candidates for the Master's degree specializing in history. Time to be arranged. (Also offered 1950 summer term.)

HOME ECONOMICS

Frances Kirkpatrick, A.M., *Professor of Home Economics, Executive Officer*

Kathryn Mildred Towne, A.M., *Associate Professor of Home Economics*

Minimum requirements for the degree.—See pages 130-31 and 132.

FIRST GROUP

- 1 *Food Selection and Preparation* (3) Kirkpatrick
Composition, selection, and preparation of food; analysis of recipes; standard products; planning, preparing, serving, and estimating the cost of meals. Material fee, \$12.50. Morning, afternoon, and evening sections.
- 22 *Clothing: Its Selection, Cost, and Care* (3) Towne
Clothing selection—the economic, aesthetic, and hygienic aspects; the application of the principles of color and design to individual selection; the care of clothing. Morning.
- 51x *Family Meals* (3) Kirkpatrick
The choice, purchase, preparation, and service of foods; dietary standards, food habits, and the nutritional needs of the family; problems of purchasing, care, and use of food by the consumer. Material fee, \$7.50. Lecture (2 hours), laboratory (3 hours)—morning.
- 53x *Family Health and Household Sanitation* (3) Kirkpatrick
Home hygiene and home care of the sick; the principles of household sanitation in relation to health and diseases. Material fee, \$4. Morning.
- 62 *Clothing Construction* (3) Towne
Techniques of construction suitable for cotton, wool, and rayon fabrics; the use of commercial patterns and their alteration; the proper selection of color, design, and fabric. Material fee, \$4. Afternoon and evening sections.
Home Economics 62x—same as Home Economics 62, but offered fall term. Morning.
- 71x *Costume Design and Fashion Economics* (3) Towne
Factors determining fashions and effect on cost of clothing; problems of the consumer of textiles and clothing; historic costume and its relation to modern dress. Material fee, \$3. Afternoon.
- 72x *Household Textiles* (3) Towne
Properties, uses, and tests of the different textile fibres and fabrics, and development of judgment and knowledge of standard for the consumer of clothing and house-furnishing material. Material fee, \$3. Morning.

77 Marketing (3)

Purchasing of foods as it relates to the home and to the institution.
(Offered in 1951-52 and alternate years.)

SECOND GROUP**102 Advanced Food Preparation (3)****Kirkpatrick**

The application of the fundamental processes of food preparation to a wider range of food materials and various services for different occasions. Material fee, \$12.50. Evening.

106 Quantity Cookery (3)**The Staff**

(Not offered in 1950-51.)

123 Household Finance and Problems of the Consumer (3)**Towne**

Economic problems of the family in modern industrial society; family income; income apportionment and household expenditures; laws affecting the home; investments; consumer buying. Afternoon.

143 Advanced Clothing Construction (3)**Towne**

Problems of clothing construction, including renovation, flat pattern designing. Material fee, \$4. Afternoon.

148 Food Problems (3)**Kirkpatrick**

Factors affecting the preparation of standard products from the experimental viewpoint; principles of food demonstrations. Material fee, \$12.50. (Not offered in 1950-51.)

152x Nutrition (3)**Kirkpatrick**

Lecture course on the principles of normal and abnormal human nutrition. Laboratory work on the calculation and preparation of dietaries. Laboratory fee, \$3. Morning.

154 Diet Therapy (3)

Study of nutrition as applied to diet and disease. Material fee, \$5. Afternoon.

164 Child Nutrition (3)**Kirkpatrick**

Basic principles in nutrition and growth of the infant, pre-school, and adolescent child in health and disease. Morning.

168 Institutional Management (3)

Study of the organization, equipment, and marketing problems of institutions. Afternoon.

171 House Furnishing (3)**Towne**

Home planning from the historic, artistic, economic, and sanitary viewpoints; home furnishings such as linens, dishes, floor covering, mattresses, etc. Material fee, \$3. Evening.

181 The Child in the Home (3)**Kirkpatrick**

Care and development of children; parent-child relationships. (Offered in 1951-52 and alternate years.)

- 192 *The Home, Its Management and Equipment* (3) Kirkpatrick
Economical management of the home; distribution of time and energy; problems in the selection, arrangement, and care of equipment. (Not offered in 1950-51.)
- 193 *Supervision of Home Management* (3) The Staff
Field work under supervision. Designed to meet requirements of those preparing to teach in federally-aided schools. Time to be arranged.
- 195-96 *Special Problems* (3-3) The Staff
Individual investigation or study under the guidance of a member of the staff. Suggested problems are: home economics education, marketing, tailoring, and draping. Program and conferences arranged with an instructor. Afternoon.
- 197-98 *Proseminar* (3-3) The Staff
The study of the most recent materials and problems in the various phases of home economics. Evening.

JOURNALISM

Elbridge Colby, Ph.D., *Professor of Journalism, Executive Officer*
 Joseph Marshall Mathias, A.B., LL.B., *Lecturer in Journalism*
 Edwin De Frees Neff, M.S., *Lecturer in Journalism*
 Stanley Samuel Baitz, LL.B., *Lecturer in Journalism*
 Frank Landt Dennis, A.B., LL.B., *Lecturer in Journalism*
 William Vance Nessly, *Lecturer in Journalism*
 Robert Earl Harper, A.B., *Lecturer in Journalism*
 Franklin John Ehlert, *Lecturer in Journalism*

The major in Journalism (Departmental).—Prerequisite: Journalism 71-72. Required: a minimum of twenty-four credit hours in second-group journalism courses including 111-12, 116, 151-52, and 199. It is recommended that electives in the junior college be selected from the following: Economics 1-2, English 71-72, History 71-72, Political Science 9-10, Psychology 1, Sociology 1-2, 71-72; and in Columbian College from the following: Business Administration 141, 142, 147; English 171-72, 177-78; Geography 51, 182; History 171-72, 174, 181-82, 191-92; Philosophy 172; Psychology 150.

FIRST GROUP

71-72 *Journalism Survey* (3-3) Colby

The newspaper and society; survey of character and content of leading newspapers to develop intelligent reading necessary for understanding of current events; history of American journalism. It is recommended that English 71-72 be taken in conjunction with this course. Prerequisite: English 1-2 or the equivalent. Morning and evening sections.

SECOND GROUP

111-12 *Reporting* (3-3) Baitz, Mathias

Techniques of newspaper reporting, instruction and practice in modern methods of gathering and presenting news. Some knowledge of typing is desirable. Prerequisite: English 1-2 or the equivalent. Laboratory fee, \$3 a term. Morning and evening sections.

115 *Copy Editing and Make-up* (3) Nessly

Editing of news prior to publication, the copy desk, head lines, make-up, the city editor and his functions. Prerequisite: Journalism 111-12 or the equivalent, unless taken concurrently. Morning.

116 *Public Relations* (3) Harper

The press and information office, technique of news releases, public addresses as news, promotion of feature material, the problem of public relations in government agencies and commercial establishments. Evening.

- 121-22 *Feature Writing* (3-3) Neff
Instruction and practice in writing of special newspaper and magazine articles for sale, material for which is obtained through interviews and independent investigation. Prerequisite: English 1-2 or the equivalent. Morning.
- 142 *Newspaper Advertising* (3) Ehler
Newspaper advertising management, coordination of newspaper advertising with retail sales patterns, advertising readership, copy preparation, production methods. Prerequisite: Business Administration 147. Evening.
- 147-48 *Reporting of National and International Affairs* (3-3)
Training in the coverage and presentation of national and international news, special attention to Washington correspondence and press association reporting. Prerequisite: Journalism 111-12 or the equivalent. Laboratory fee, \$3 a term. (Not offered in 1950-51.)
- 151-52 *Editorial Writing* (3-3) Colby
Current events from the standpoint of editorial interpretation, instruction and practice in the writing of editorials and columns on public affairs. It is recommended that History 191-92 be taken in conjunction with this course. Admission by permission of the instructor. Morning and evening sections.
- 199x *Law of the Press* (3) Dennis
Freedom of the press, censorship, legislative controls, publication as contempt of court, copyright, news gathering agencies, labor law and the newspaper business, law of libel, privileged matter, fair comment on public characters, right of privacy. Morning.

LAW

- William Cabell Van Vleck, A.B., LL.B., S.J.D., LL.D., *Professor of Law*
 Charles Sager Collier, A.B., LL.B., S.J.D., *Professor of Law*
 William Thomas Fryer, A.B., LL.B., J.D., *Professor of Law*
 Saul Chesterfield Oppenheim, A.M., J.D., S.J.D., *Professor of Law*
 Carville Dickinson Benson, A.B., LL.B., S.J.D., *Professor of Law*
 James Forrester Davison, A.B., LL.B., LL.M., S.J.D., *Professor of Law*
 James Oliver Murdock, Ph.B., LL.B., *Professor of Law*
 Oswald Symister Colclough, B.S., LL.B., LL.D., *Professor of Law*
 George Bowdoin Craighill, A.B., LL.B., *Adjunct Professor of Law*
 James Ward Morris, A.B., *Adjunct Professor of Law*
 James Robert Kirkland, A.B., LL.B., LL.M., *Adjunct Professor of Law*
 Bolitha James Laws, LL.B., LL.M., *Adjunct Professor of Law*
 Conder Caywood Henry, A.B., LL.B., *Adjunct Professor of Law*
 John Wingfield Jackson, B.S., LL.B., *Adjunct Professor of Law*
 Elliott DeJarnette Marshall, LL.B., *Adjunct Professor of Law*
 Frank Hammett Myers, LL.B., LL.M., *Adjunct Professor of Law*
 Alvin Leroy Newmyer, LL.B., *Adjunct Professor of Law*
 John Albert McIntire, A.B., LL.B., *Professorial Lecturer in Law*
 Justin Lincoln Edgerton, A.B., LL.B., *Professorial Lecturer in Law;*
 Clerk of the Moot Court
 Karl Rhorer Price, A.B., LL.B., *Professorial Lecturer in Law*
 Philip Field Herrick, A.B., LL.B., LL.M., *Professorial Lecturer in Law*
 Raymond Stevens Smethurst, B.S., LL.B., *Professorial Lecturer in Law*
 Francis Gerald Toye, B.S. in E.E., LL.B., *Professorial Lecturer in Law*
 George Edward Monk, A.B., LL.B., LL.M., *Professorial Lecturer in*
 Law
 Louis Loss, B.S., LL.B., *Professorial Lecturer in Law*
 Charles Sylvanus Rhyne, LL.B., *Professorial Lecturer in Law*
 Jennings Bailey, Jr., LL.B., *Professorial Lecturer in Law*
 Robert McKinney Cooper, Ph.M., J.D., *Associate Professor of Law*
 Leroy Sorenson Merrifield, A.B., LL.B., M.P.A., *Associate Professor of*
 Law
 John Patrick Burke, A.B., LL.B., *Associate Professor of Law*
 Herman Israel Orentlicher, A.B., LL.B., *Associate Professor of Law*
 * John Theodore Fey, LL.B., M.B.A., *Associate Professor of Law*
 David Benson Weaver, A.B., LL.B., *Assistant Professor of Law*
 William Lester Griffin, A.B., LL.B., LL.M., *Assistant Professor of Law*
 Louis Harkey Mayo, B.S., LL.B., *Assistant Professor of Law*

* On leave of absence 1950-51.

Arthur Selwyn Miller, A.B., LL.B., *Assistant Professor of Law*
 William Leigh Ellis, A.B., LL.B., LL.M., *Lecturer in Law*
 John Alexander Kendrick, A.B., LL.B., *Assistant Clerk of Moot Court*

102 *Agency* (2) Cooper, Murdock

Problems of agency in the conduct of business. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

112x *Contracts* (4) Merrifield, _____

Promissory obligation: offer and acceptance, consideration, statute of frauds, formal instruments, rights of third parties, assignments, joint obligations, conditions, performance, discharge. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

123x *Criminal Law and Procedure* (4) Cooper, _____

Elements of criminal liability; specific crimes; combinations of persons in crime; criminal procedure. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

129 *Legal Method and Legal System* (4) Fryer, Benson, Merrifield, Burke, Orentlicher

Introduction to study of substantive and procedural law. Examination of basic concepts with training in method and technique of case law, based upon modern records in state and federal cases and individual practice in the use of law books and legal writing. Importance of language in law and legal reasoning, both apart from and in connection with statutory interpretation and as affected by the use of precedents, under the doctrines of stare decisis, law of the case, and res judicata. Background on development of the English and American legal systems; organization of the judiciary and the bar, stressing enforcement of ethical standards. Fryer and Benson, *Cases on Legal Method*; Fryer and Benson, *Cases on Legal System*. Morning and evening sections. (Also offered 1950 summer term.)

Law 129x—same as Law 129, but offered winter term. Morning and evening sections.

133x *Personal Property* (4) Fryer

Concepts of property, possession, and ownership; legal relations with respect to chattels and documentary intangibles created by gift, sale, pledge, lien, bailment, etc. Fraser, *Cases on Property*, Vol. II, 2d ed.; Fryer, *Readings on Personal Property*, 3d ed. Morning and evening sections. (Also offered 1950 summer term.)

137-38 *Real Property* (2-2) Benson, Weaver

Real property; introduction; estates, seisin, landlord and tenant; future interests at common law and under the statutes of uses and wills; merger, elementary study of remoteness and powers; adverse possession; prescription; natural rights. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)

- 141 Torts (4)** Van Vleck, Merrifield
Civil liability for harms to legally protected interests. Thurston and Seavey, *Cases on Torts*. Morning.
Law 141x—same as Law 141, but offered winter term. Evening.
- 205 Civil Procedure (4)** Burke
Function and composition of pleadings, including their relation to proof. Emphasis is upon reforms, as exemplified by modern code provisions and the Federal Rules of Civil Procedure. Clark, *Cases on Pleading and Procedure*, 2d ed. Morning and evening sections.
- 214x Constitutional Law (4)** Collier
Historical introduction; judicial approach and methods; doctrine of the separation of powers; powers of the National Government; the federal system; relation of the state courts and the federal courts. Dodd, *Cases on Constitutional Law*, 3d ed. Morning and evening sections. (Also offered 1950 summer term.)
- 223x Domestic Relations (2)**
Marriage, annulment, and divorce; rights of husband and wife; rights of parent and child; infants. (Not offered in 1950-51.)
- 231 Equity (4)** Burke, Weaver, ———
Specific performance of contracts; equitable conversion; statute of frauds; mutuality; conditions; defenses; equitable servitudes; powers of an equity court; effect of decrees, interpleader, bills of peace, cloud on title, rescission and reformation, mistake. Chafee and Simpson, *Cases on Equity*, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)
Law 231x—same as Law 231, but offered winter term. Morning.
- 233-34 Evidence (2-2)** Fryer
Functions of court and jury; witnesses; hearsay, opinion, and circumstantial evidence; proof of authenticity and contents of writings. McCormick, *Cases on Evidence*, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)
- 246 Negotiable Instruments (4)** Orentlicher
Bills of exchange, promissory notes and checks, especially under the Negotiable Instruments Law. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)
- 248 Conveyances (2)** Benson, ———
Conveyances, rents, easements, profits, licenses, covenants running with the land, and recording. Kirkwood, *Cases on Conveyances*, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)
- 251 Restitution (4)**
Legal remedies for restitution of benefits obtained or conferred by performance of contract, misrepresentation, mistake, and coercion. (Not offered in 1950-51.)
- 253x Unfair Trade Practices (4)** Oppenheim
Unfair trade practices at common law and under state and federal statutes. Trade-marks and trade names, including Trade Mark Act

of 1946. Misappropriation. False advertising at common law. Federal Trade Commission jurisdiction over misrepresentation practices. Lotteries and premiums. Disparagement of competitor's goods and business methods. State Fair Trade Acts (resale price maintenance). Price discrimination (State and Federal Robinson-Patman Act). State statutes, prohibiting sales below cost. Inducing breach of contract. Commercial bribery. Miscellaneous business torts constituting unprivileged interferences with advantageous business relations. Oppenheim, *Unfair Trade Practices, Cases, Comments and Materials* (1950). Morning and evening sections.

254 *Wills* (2)

Benson, ———

Formation and revocation of wills; testate and intestate succession. Mechem and Atkinson, *Cases on Wills and Administration*, 3d ed. Morning and evening sections. (Also offered 1950 summer term.)

256 *Sales* (2)

Orentlicher

Common law, Uniform Sales Act and related statutes. Intention to transfer property interest (specific, unascertained, and future goods); specification and appropriation; cash and conditional sales; C.O.D., F.O.B., and C.I.F. shipments; negotiable bills of lading and warehouse receipts; trust receipts; fraud on seller, retention of possession and bulk sales; remedies of seller and buyer, including suit for price, stoppage in transit, seller's warranties; inspection. Morning and evening sections. (Also offered 1950 summer term.)

258 *Partnerships* (2)

Nature and formation of partnerships, rights in partnership property, relations of partners among themselves, remedies of creditors, dissolution and winding up. Morning and evening sections.

303-4 *Administrative Law* (2-2)

Davison

Legislative setting for administrative bodies; judicial control of administrative action, public utilities, taxation, alien laws. Federal Trade Commission, workmen's compensation, etc. Katz, *Cases on Administrative Law*. Morning section (4)—fall term; evening section (2-2)—fall and winter terms.

311 *Corporations* (4)

Cooper

Legal requirements as to contributions of capital; powers and rights of corporations, corporate officials, and shareholders. Berle and Warren, *Business Organization—Corporations*. Morning and evening sections. (Also offered 1950 summer term.)

315x *Conflict of Laws* (4)

Van Vleck

Study of cases involving foreign elements; principles of jurisdiction and limitations upon its exercise; procedure, torts, workmen's compensation, contracts, property, family law, administration of estates, business associations. Cheatham, Dowling, Goodrich, and Griswold, *Cases on Conflict of Laws*, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)

317 *Creditors' Rights* (4)

Remedies of unsecured creditors: judgments, fraudulent conveyances, creditors' agreements, equity and statutory receiverships, and bankruptcy. The general approach is that of law administration. Summer term 1950.

- 321-22 *Current Decisions* (2-2) Davison
Required of, and limited to, members of the student staff of the *Law Review*. Time to be arranged.
- 324x *Federal Jurisdiction* (2) Cooper, Burke
Constitutional origins and powers of federal courts; sources of law applicable to them; business and extent of jurisdiction of federal courts. McCormick and Chadbourn, *Cases on Federal Courts*. Morning and evening sections.
- 326x *Insurance* (2) Griffin
The insurance device in life, property, and other risks. Vance, *Cases on Insurance*, 3d ed. Morning and evening sections.
- 327-28 *International Law* (2-2) Murdock
Customary and treaty rights and duties of states; diplomatic and consular agents; treaty interpretations; nationality laws; international courts; claims procedure; war; neutrality. Hudson, *Cases on International Law*, 2d ed. Morning and evening sections.
- 329-30 *Labor Law* (2-2) Merrifield, Smethurst
Laws applicable to strikes, picketing, boycotts, etc.; organization and representation of employees; negotiation of collective bargaining contracts; inter-union and intra-union relations; settlement of wage disputes (arbitration, mediation, conciliation). Cases, legislative and administrative materials, readings. Morning section (4)—fall term; evening section (2-2)—fall and winter terms.
- 332x *Legal Accounting* (2) _____
A study of elementary accounting principles and techniques, and an introduction to the interpretation of financial statements. Evening.
- 333-34 *Legislation* (2-2) Ellis
Justiciable aspects of the legislative process; forms and types of statutes; principles of statutory interpretation, structure, and drafting. Read & McDonald, *Cases and Materials on Legislation*. Evening. (Also offered 1950 summer term)
- 335-36 *Moot Court* (2-2) Laws, Morris, Craighill, Kirkland,
Edgerton, Myers, Marshall, Jackson, Herrick, Monk,
Newmyer, Kendrick
To be taken in the senior year. Prerequisite: Law 205 and 233-34. Morning and evening sections.
- 345 *Substantive Patent Law** (2) Toye
Substantive patent law; patentability; revision, use, and enforcement of patents. Evening.
- 346 *Patent Office Practice** (2) Henry
Rules of practice; appeal and interference procedure. Evening.

* Patent law students should take Law 345 and Law 346 concurrently in the fall term and Law 346 and Law 350 concurrently in the winter term. Law 340-50 may be taken only by students who are taking or have taken Law 345.

- 349-50 *Patent Moot Court** (2-2) Henry, Bailey
This course may be elected instead of Law 335-36 to satisfy the Moot Court requirement. Both subjects may not be counted toward a degree. Evening.
- 351 *Public Utilities* (2) Davison
Limits of regulation of businesses affected with public interest; ascertainment of value of property used for the public service and the fixing of adequate rates of return. Welch, *Cases on Public Utility Regulation*, 3d ed. Evening.
Law 351x—same as Law 351, but offered winter term. Morning.
- 358 *S.E.C. Aspects of Corporate Finance* (2) Loss
Federal and state regulation of the distribution of securities, the securities markets, and the corporate structure, and management of public utility and investment companies. Primarily the aspects of corporate finance dealt with by the Securities and Exchange Commission. Evening.
- 362x *Security Transactions* (4) Orentlicher
Security interests in real and personal property, their creation, transfer, enforcement, and extinguishment, together with security problems in the fields of suretyship and bankruptcy. Casebook to be announced. Morning and evening sections. (Also offered 1950 summer term.)
- 373x *Taxation* (4) Collier
Introductory course on basic concepts of federal tax system. Attention given to state inheritance and income taxes. Problem of jurisdiction to tax, construction of tax statutes, methods of judicial review of administrative actions in the tax field, modern excise taxes on business concerns. Magill and Maguire, *Cases on Taxation*, 4th ed. Morning.
- 375-76 *Taxation—Federal* (2-2) Price
Federal income, gift, and estate taxes, and selected federal tax problems. Evening.
- 378x *Federal Anti-Trust Laws* (4) Oppenheim
Restraints of trade at common law. Public policy under Sherman Anti-Trust Act of 1890 and Federal Trade Commission and Clayton Acts, including mergers, consolidations and monopoly. Loose association activities (price-fixing agreements, trade associations, international cartels). Specific practices such as resale price maintenance, delivered price systems, exclusive arrangements and tying devices, trade boycotts. Patents and copyrights under anti-trust laws. Remedies. Oppenheim, *Cases on Federal Anti-Trust Laws*. Evening.
- 381x *Trusts* (4) Weaver
Creation, elements, administration, enforcement, termination. Liabilities to and of third persons. Resulting and constructive trusts. Bogert, *Cases on Trusts*, 2d ed. Morning and evening sections. (Also offered 1950 summer term.)

* Patent law students should take Law 345 and Law 349 concurrently in the fall term and Law 346 and Law 350 concurrently in the winter term. Law 349-50 may be taken only by students who are taking or have taken Law 345.

- 403-4 *Administrative Law Seminar (2-2)* Davison
Research seminar course in special problems, including the study of specific administrative agencies, federal or state. Time to be arranged.
- 406 *Aviation Law (2)* Rhync
Procedure before Civil Aeronautics Board; legal problems arising in connection with air transportation and airports; international conventions and organizations. Evening.
- 407x *Admiralty (2)*
Federal and state jurisdiction; jurisdiction over waters, craft, contracts, torts, crimes, in equitable matters, etc.; laws applicable to maritime workers and maritime liens. Evening.
- 415-16 *Comparative Law (2-2)* Murdock
Historical and comparative study of some of the institutions and principles of the Roman and modern Civil Law (law of South and Central America and most of the Continent of Europe) compared with those of the Common Law; the influence of the former upon the latter. Evening.
- 421 *Constitutional Law Seminar (2)* Collier
Research seminar in contemporary problems in constitutional law. Time to be arranged.
- 430x *International—Comparative Law Seminar (2)* Murdock
Research seminar in contemporary problems. Time to be arranged.
- 434 *Interstate Commerce Commission Law and Procedure (2)*
Interstate Commerce Act; the Interstate Commerce Commission; practice and procedure before the Commission. Evening.
- 435x *Jurisprudence (4)* Collier
History of jurisprudence; schools of jurists, particularly the nineteenth century schools; sociological jurisprudence; theories of justice; the nature of law; law and morals; law and the state; the scope and subject matter of law, sources and forms of law; the traditional element; analysis of general legal concepts. Hall, Readings in Jurisprudence. Evening.
- 447 *Municipal Corporations (2)* McIntire
Municipal corporations: organization, powers, functions and legal relations of local governmental units. Tooke and McIntire. Cases on Municipal Corporations. Evening. (Also offered 1950 summer term.)
- 448 *Government Corporations (2)* McIntire
Federal corporate agencies: organization, powers, functions, and legal relations of functional governmental units separately incorporated. Casebook to be announced. Prerequisite: Law 447. Evening.
- 451 *Trade Regulation Seminar (2)* Oppenheim
A research seminar in specific current problems relating to federal anti-trust laws and unfair trade practices. Time to be arranged.

MATHEMATICS

James Henry Taylor, Ph.D., *Professor of Mathematics, Executive Officer*
 Francis Edgar Johnston, Ph.D., *Professor of Mathematics*
 Florence Marie Mears, Ph.D., *Professor of Mathematics*
 Nels David Nelson, Ph.D., *Assistant Professor of Mathematics*
 Earl Larkin Williams, A.M., *Lecturer in Mathematics*
 Joachim Weyl, Ph.D., *Lecturer in Mathematics*
 Louis William Tordella, Ph.D., *Lecturer in Mathematics*

Minimum requirements for the major in Mathematics (Departmental).—Fifteen credit hours of mathematics beyond calculus, i.e., of approved second- and third-group courses.

FIRST GROUP*

3 *College Algebra* (3) The Staff

Exponents and logarithms; linear equations; complex numbers; quadratic equations; introduction to theory of equations; mathematical induction and the binomial theorem; permutations, combinations, and probability; determinants; progressions. Prerequisite: one year each of high school algebra and high school geometry. Morning and evening sections. (Also offered 1950 summer term.)

Mathematics 3x—same as Mathematics 3, but offered winter term. Morning and evening sections.

6 *Plane Trigonometry* (3) The Staff

Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3 (or concurrent registration therefor). Morning and evening sections. (Also offered 1950 summer term.)

Mathematics 6x—same as Mathematics 6, but offered fall term. Morning and evening sections.

12 *Analytic Geometry* (3) The Staff

Prerequisite: Mathematics 3 and 6, or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry. Morning and evening sections. (Also offered 1950 summer term.)

Mathematics 12x—same as Mathematics 12, but offered fall term. Morning and evening sections.

19 *Differential Calculus* (3) The Staff

Prerequisite: Mathematics 12. Morning and evening sections. (Also offered 1950 summer term.)

Mathematics 19x—same as Mathematics 19, but offered winter term. Morning and evening sections.

* No first-group course in mathematics is available for college credit if the student's previous training in mathematics meets the prerequisite for a higher numbered course.

20 Integral Calculus* (3)

The Staff

Prerequisite: Mathematics 19. Morning and evening sections. (Also offered 1950 summer term.)

Mathematics 20x—same as Mathematics 20, but offered fall term. Morning and evening sections.

SECOND GROUP***102 Fundamental Concepts of Mathematics (3)**
(Not offered in 1950-51.)**112 Mathematics for Engineers and Scientists (3)** The Staff
Topics from advanced calculus, partial differential equations, vector analysis, and complex variables. Prerequisite: Mathematics 132. Evening. (Also offered 1950 summer term.)
Mathematics 112x—same as Mathematics 112, but offered fall term. Evening.**123x Theory of Equations (3)** Johnston
Morning. (Also offered 1950 summer term.)**125 Advanced Algebra (3)** Johnston
Summer term 1950.**126x Advanced Analytic Geometry (3)** Taylor
Morning.**132 Differential Equations (3)** The Staff
Morning and evening sections. (Also offered 1950 summer term.)
Mathematics 132x—same as Mathematics 132, but offered fall term. Morning and evening sections.**134 Introduction to Boundary Value Problems (3)**
Prerequisite: Mathematics 132. (Not offered in 1950-51.)**†135-36 Projective Geometry (2-2)**
(Not offered in 1950-51.)**139 Advanced Calculus (3)** Mears, Nelson
Morning and evening sections.**140 Introduction to Analysis (3)** Mears, Nelson
Prerequisite: Mathematics 139. Evening.**141 Introduction to Infinite Series (3)** Mears
Evening.**167 Fourier Series and Spherical Harmonics (3)**
Prerequisite: Mathematics 132. (Not offered in 1950-51.)

* Mathematics 20 is prerequisite to all second-group courses.

171 *Vector Analysis* (3)
Evening.

Taylor

THIRD GROUP

202 *Mathematical Logic* (3)
(Not offered in 1950-51.)

220 *Theory of Numbers* (3)
Evening.

Johnston

†237-38 *Theory of Functions* (3-3)
(Not offered in 1950-51.)

242 *Infinite Series* (3)
Evening.

Mears

249 *Ordinary Differential Equations* (3)
(Not offered in 1950-51.)

250 *Integral Equations* (3)
(Not offered in 1950-51.)

255 *Differential Geometry* (3)
Evening.

Taylor

257 *Theory of Groups* (3)
(Not offered in 1950-51.)

265-66 *Modern Algebra* (3-3)
Evening.

Johnston

268 *Calculus of Variations* (3)
(Not offered in 1950-51.)

270 *Tensor Analysis* (3)
Evening.

Taylor

271 *Riemannian Geometry* (3)
(Not offered in 1950-51.)

277 *Partial Differential Equations* (3)
Evening.

Weyl

278 *Introduction to Topology* (3)
Evening.

Weyl

295-96 *Reading and Research* (3-3)
Time to be arranged.

The Staff

299-300 *Thesis* (3-3)

The Staff

MECHANICAL ENGINEERING

- Arthur Frederick Johnson, M.E., Ph.D., *Professor of Mechanical Engineering*
 Frederick Morris Feiker, B.S. in E.E., D.Eng., *Professor of Engineering Administration*
 Benjamin Carpenter Cruickshanks, B.S. in M.E., *Professor of Mechanical Engineering, Executive Officer*
 Robert Gay Trumbull, B.S. in C.E., *Associate Professor of Mechanical Engineering*
 Charles Edward Greeley, B.S. in M.E., *Associate Professor of Mechanical Engineering*
 Frederick Henry Kohloss, B.S. in M.E., LL.B., *Assistant Professor of Mechanical Engineering*
 Rudolph Michel, M.S. in M.E., *Lecturer in Mechanical Engineering*
 Edward Frederick Kelley, M.S., Ae.E., *Lecturer in Mechanical Engineering*
 Bernard Bernstein, B.S., B.M.E., *Lecturer in Mechanical Engineering*
 Richard Lee Fenton, B.M.E., *Lecturer in Mechanical Engineering*
 William Clayton Justice, B.S. in Eng., *Lecturer in Mechanical Engineering*
 John Clifford Goff, B.M.E., *Associate in Mechanical Engineering*
 Edward French Davis, M.S., *Associate in Mechanical Engineering*
- Minimum requirements for the major.—See pages 112 and 115-16.*

FIRST GROUP

- 1 *Engineering Survey and Orientation* (1) Cruickshanks and Staff
 Open to freshmen only. Afternoon and evening sections.
- 3 *Mechanical Drawing* (2) Trumbull, Kohloss, Davis
 Drafting-room fee, \$3. Drafting (6 hours)—afternoon and evening sections.
- 4 *Descriptive Geometry* (2) Trumbull, Kohloss, Davis
 Drafting-room fee, \$3. Drafting (6 hours)—afternoon and evening sections.
- 5 *Introductory Naval Architecture* (3)
 Nomenclature, functions, and arrangement of hull structure, equipment, and machinery for merchant vessels. Lectures supplemented by visits to shipyards. (Not offered in 1950-51.)
- 7 *Machine Drawing* (2) Trumbull, Goff
 Prerequisite: Mechanical Engineering 3 and 4. Drafting-room fee, \$3. Drafting (6 hours)—afternoon and evening sections.

- 8 *Mechanism Drawing* (2) Trumbull, Goff
Prerequisite: Mechanical Engineering 3, 4, and 13. Prerequisite or concurrent registration: Mechanical Engineering 14. Drafting-room fee, \$3. Drafting (6 hours)—afternoon and evening sections.
- 9-10 *Ship Drafting* (2-2)
Fairing of lines; displacement, stability curves, midship section, general arrangements and structural detail plans, machinery details. Prerequisite or concurrent registration: Mechanical Engineering 15. Drafting-room fee, \$3 a term. (Not offered in 1950-51.)
- 13-14 *Mechanism* (2-2) Trumbull, Fenton
Prerequisite: Mathematics 19. Prerequisite or concurrent registration: Mathematics 20. Morning and evening sections.
- 15-16 *Elementary Ship Calculations* (2-2)
Form characteristics, detailed weights, displacement, transverse and longitudinal equilibrium, launching. Prerequisite: Mechanical Engineering 5. (Not offered in 1950-51.)

SECOND GROUP

- 101-2 *Advanced Ship Calculations* (2-2)
Stabilizing, model basin practice, powering, steering, launching, hull strength, floodability, vibrations. Prerequisite: Mechanical Engineering 16. (Not offered in 1950-51.)
- 103-4 *Ship Design* (2-2)
Prerequisite: Mechanical Engineering 10, 16. Prerequisite or concurrent registration: Mechanical Engineering 117. Drafting-room fee, \$3 a term. (Not offered in 1950-51.)
- 111-12 *Thermodynamics* Cruickshanks, Kohloss, Bernstein
(3-3)
With introductory study of laws of heat transmission. Prerequisite: Mechanical Engineering 14; Physics 8. Prerequisite or concurrent registration: Mathematics 20. Morning and evening sections. (Also offered 1950 summer term.)
- 115-16 *Mechanical Laboratory* (2-2) Greeley
Calibration of instruments; calorimetry; testing of prime movers, auxiliaries, and combustion engines. Eight-hour boiler test required. Prerequisite: Mechanical Engineering 13-14 and 111-12. Prerequisite or concurrent registration: Mechanical Engineering 129. Laboratory fee, \$6 a term. Laboratory (6 hours)—afternoon and evening sections.
- 117-18 *Marine Engines and Auxiliaries* (2-2)
Details, arrangements and performance of steam uniflow, steam turbine, and Diesel propelling plants. Prerequisite or concurrent registration: Mechanical Engineering 5, 13-14, and 111-12. (Not offered in 1950-51.)

- 126 *Methods of Manufacture* (2) Greeley
Fixtures, gauging, tools, costs. Prerequisite: Mechanical Engineering 8 and 14; Civil Engineering 26. Morning and evening sections.
- 127-28 *Machine Design* (2-2) Johnson
With stress-analysis lectures. Prerequisite: Mechanical Engineering 112 and 126; Civil Engineering 26, 123, 136, and 141. Drafting-room fee, \$3 a term. Computation and drafting (3 hours)—Saturday morning.
- 129-30 *Power Plants* (3-3) Cruickshanks, Justice
Study of design, layout, installation, and operation of power plants and equipment. Prerequisite: Mechanical Engineering 112. Morning and evening sections.
- 131-32 *Heating, Ventilating, Air Conditioning, and Refrigeration* (2-2) Kohloss
Prerequisite: Mechanical Engineering 112. Morning and evening sections.
- 133 *Combustion Engines* (2) Greeley
Prerequisite: Mechanical Engineering 112; Civil Engineering 123 and 136; Electrical Engineering 10. Morning and evening sections.
- 139 *Fluid Dynamics* (3) Johnson, Kelley
The theories of hydro- and aero-mechanics as influenced by density, viscosity, and turbulence. Prerequisite: Mechanical Engineering 112; Civil Engineering 140. Morning and evening sections.
- 140 *Dynamics of Machinery* (3) Johnson, Michel
Inertia effects, balancing, vibration phenomena. Prerequisite: Mechanical Engineering 115; Civil Engineering 123 and 136. Morning and evening sections.
- 141-42 *Management Problems* (2-2) Feiker
Organization of an industrial enterprise; the handling and training of men. Prerequisite: Economics 1-2. Morning and evening sections.
- 145 *Production Control and Planning* (2)
Scope of production controls, product analysis, planning and routing systems and methods. Prerequisite: Mechanical Engineering 141-42. Evening.
- 146 *Engineering Patent Procedure* (2)
Nature and purpose of patents, procedures for preparing and filing patent applications, trade marks and design patents, employer-employee relations. Prerequisite: Mechanical Engineering 141-42. Evening.
- 147 *Industrial Labor Relations* (2)
Prerequisite: Mechanical Engineering 141-42. (Not offered in 1950-51.)
- 189-90 *Proseminar in Mechanical Engineering* (1-1) Johnson
Saturday morning.

MEDICINE

- Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Professor of Medicine*
Thomas McPherson Brown, A.B., M.D., *Professor of Medicine, Executive Officer*
Charles Robert Lee Halley, A.B., M.D., *Clinical Professor of Medicine*
Paul Frederick Dickens, M.D., *Clinical Professor of Medicine*
Benjamin Frank Miller, B.S., Chem. Eng., M.D., *Clinical Professor of Medicine*
Clayton Bernard Ethridge, M.D., *Clinical Professor of Medicine*
Sol Katz, B.S., M.D., *Adjunct Clinical Professor of Medicine*
Harry Eagle, A.B., M.D., *Adjunct Clinical Professor of Medicine*
Louis Katz Alpert, B.S., M.D., *Adjunct Clinical Professor of Medicine*
Joseph Francis Fazekas, B.S., M.D., *Adjunct Clinical Professor of Medicine*
Clark Harvey Yeager, M.D., Dr.P.H., *Professorial Lecturer on Tropical Medicine*
Norman Hawkins Topping, A.B., M.D., *Professorial Lecturer on Rickettsial Diseases*
Monroe James Romansky, A.B., M.D., *Associate Professor of Medicine*
Peter Diacoumis Comanduras, M.D., M.S., *Associate Clinical Professor of Medicine*
Walter Kendall Myers, B.S., M.D., *Assistant Clinical Professor of Medicine*
John Alton Reed, A.B., M.D., *Assistant Clinical Professor of Medicine*
Theodore Judson Abernethy, B.S., M.D., *Assistant Clinical Professor of Medicine*
William Travis Gibb, Jr., A.B., M.D., *Assistant Clinical Professor of Medicine*
John McCallum Evans, A.B., M.D., *Assistant Clinical Professor of Medicine*
Roy Hertz, Ph.D., M.D., *Assistant Clinical Professor of Medicine*
Carl Leonard Larson, B.S., M.D., *Assistant Clinical Professor of Medicine*
Carl Calvin Dauer, A.B., M.D., M.P.H., *Assistant Clinical Professor of Medicine*
Samuel Ross Taggart, M.D., *Assistant Clinical Professor of Medicine*
Alfred Henry Lawton, M.D., Ph.D., *Assistant Clinical Professor of Medicine*
Benjamin Manchester, M.D., *Assistant Clinical Professor of Medicine*
Irving Wolfe Winik, M.D., *Assistant Clinical Professor of Medicine*

Clarence Richard Hartman, A.B., M.D., *Assistant Clinical Professor of Medicine*

John Minor, A.B., M.D., *Associate in Medicine*

Watson William Eldridge, Jr., M.D., *Associate in Medicine*

Maurice Protas, A.B., M.D., *Associate in Medicine*

Pearl Holly, M.S., M.D., *Associate in Medicine*

Lawrence Jay Thomas, B.S., M.D., *Associate in Medicine*

James Joseph Feffer, A.B., M.D., *Associate in Medicine*

Lawrence Elias Putnam, A.B., M.D., *Associate in Medicine*

John Watkins Trenia, A.B., M.D., *Associate in Medicine*

Bernard Lauriston Hardin, Jr., A.B., M.D., *Associate in Medicine*

Andrew Gabriel Prandoni, B.S., M.D., *Associate in Medicine*

Charles William Ordman, A.B., M.D., *Associate in Medicine*

Ruth Hechler Wichelhausen, M.D., *Associate in Medicine*

Albert David Kistin, A.M., M.D., *Associate in Medicine*

Benjamin Calloway Jones, Jr., M.D., *Associate in Medicine*

Richard Bernard Castell, A.B., M.D., *Associate in Medicine*

Myer Harold Stolar, B.S., M.D., *Associate in Medicine*

Kenneth McLane Smith, A.B., M.D., *Associate in Medicine*

James Edward McCormack, A.B., M.D., *Associate in Medicine*

Sam Thompson Gibson, B.S., M.D., *Associate in Medicine*

Walter Lewis Nalls, B.S., M.D., *Associate in Medicine*

Luther Henry Snyder, A.B., M.D., *Clinical Instructor in Medicine*

Emil Herbert Bauersfeld, A.B., M.D., *Clinical Instructor in Medicine*

John Bayne Marbury, M.D., *Clinical Instructor in Medicine*

Louis Ross, M.D., *Clinical Instructor in Medicine*

James Theodore Burns, M.D., *Clinical Instructor in Medicine*

Frederic Dunbar Chapman, A.B., M.D., C.M., *Clinical Instructor in Medicine*

Irvin Kerlan, B.S., M.D., C.P.H., *Clinical Instructor in Medicine*

Virginia Patterson Beelar, A.B., M.D., *Clinical Instructor in Medicine*

Alfred Brigulio, M.D., *Clinical Instructor in Medicine*

Lester Sylvan Blumenthal, A.B., M.D., M.S. in Med., *Clinical Instructor in Medicine*

Samuel Jacob Nathan Sugar, Phar.G., M.D., *Clinical Instructor in Medicine*

Joseph Ney, B.S., M.D., *Clinical Instructor in Medicine*

Henry Dunlop Ecker, B.S., M.D., *Clinical Instructor in Medicine*

John Wilmer Latimer, Jr., M.D., *Clinical Instructor in Medicine*

Charles Wilson Jones, A.B., M.D., *Clinical Instructor in Medicine*

Halla Brown, M.D., *Clinical Instructor in Medicine*

Frank Solomon Bacon, B.S., M.D., *Clinical Instructor in Medicine*

Joseph Beinstein, A.B., M.D., *Clinical Instructor in Medicine*

William Frank, M.D., *Clinical Instructor in Medicine*

Stanley William Kirstein, M.D., *Clinical Instructor in Medicine*
James Walling Long, M.D., *Clinical Instructor in Medicine*
Ralph Bretney Miller, M.D., *Clinical Instructor in Medicine*
Raymond Schwartz, A.B., M.D., *Clinical Instructor in Medicine*
Robert George Taylor, M.D., *Clinical Instructor in Medicine*
Charles Waters Thompson, M.D., *Clinical Instructor in Medicine*
Thomas Stone Sappington, A.B., M.D., *Clinical Instructor in Medicine*
Maurice Franks, M.D., *Clinical Instructor in Medicine*
Charles Edward Law, M.D., *Clinical Instructor in Medicine*
Israel Kessler, M.S., M.D., *Clinical Instructor in Medicine*
Jack Jacob Rheingold, A.B., M.D., *Clinical Instructor in Medicine*
Francis James Murray, A.B., M.D., *Clinical Instructor in Medicine*
Robert Lee Brickhouse, B.S., M.D., *Clinical Instructor in Medicine*
Morris Hirsh Rosenberg, A.B., M.D., *Clinical Instructor in Medicine*
Hyman Joseph Zimmerman, A.B., M.D., *Clinical Instructor in Medicine*
Maurice Mensh, M.D., *Clinical Instructor in Medicine*
Robert Norwood Coale, B.S., M.D., *Clinical Instructor in Medicine*
Harry Clark Bates, B.S., M.D., *Clinical Instructor in Medicine*
James Francis Ambury, B.S., M.D., *Clinical Instructor in Medicine*
William Otis Bailey, Jr., M.D., *Clinical Instructor in Medicine*
Edwin Pearson Parker III, B.S., M.D., *Clinical Instructor in Medicine*
Thomas Joseph Pekin, M.D., *Clinical Instructor in Medicine*
Andrew Joseph Brennan, M.D., *Clinical Instructor in Medicine*
Eugene Solomon Gladsden, B.S., M.D., *Clinical Instructor in Medicine*
Jeanne Cecile Bateman, A.B., M.D., *Clinical Instructor in Medicine*
Richard Lee Whelton, M.D., *Clinical Instructor in Medicine*
John William Du Chez, M.D., *Clinical Instructor in Medicine*
Thomas Lees Hartman, A.M., M.D., *Clinical Instructor in Medicine*
William Raymond Merchant, A.B., M.D., *Clinical Instructor in Medicine*
Sidney Olansky, B.S., M.D., *Clinical Instructor in Medicine*
Boris Rabkin, A.B., M.D., *Clinical Instructor in Medicine*
Morton Harold Rose, M.D., *Clinical Instructor in Medicine*
George Sharpe, A.B., M.D., *Clinical Instructor in Medicine*
Irene Gorski Tamagna, M.D., *Clinical Instructor in Medicine*
Warren Daniel Brill, B.S., M.D., *Clinical Instructor in Medicine*
Frederick Warren Coe, B.S., M.D., *Clinical Instructor in Medicine*
Joseph Michael Pisani, A.B., M.D., *Clinical Instructor in Medicine*
Marvin Fuchs, B.S., M.D., *Clinical Instructor in Medicine*
Frank Goodnow MacMurray, A.B., M.D., *Clinical Instructor in Medicine*
Ruth Boschwitz Benedict, M.D., *Clinical Instructor in Medicine*
Cyril Augustus Schulman, M.D., *Clinical Instructor in Medicine*
William Jack Weaver, Jr., A.B., M.D., *Clinical Instructor in Medicine*

James Irving Boyd, M.D., *Lecturer in Medicine*

Louis Aleck Craig, Jr., A.B., M.D., *Clinical Instructor in Medicine*

132 History of Medicine

One hour a week.

The Staff

236 Clinical Microscopy

Conferences and studies in the clinical application of laboratory examinations of blood, body fluids, exudates, and excreta. Three hours a week.

The Staff

241 Physical Diagnosis I

Theoretical considerations of the principles of physical diagnosis. One hour a week.

The Staff

242 Physical Diagnosis II

Covers not only theoretical but practical application of principles of physical diagnosis as related to examination of patients. Six hours a week.

The Staff

244 Introduction to Medicine

Lectures covering the principles of internal medicine preparatory to clinical studies and training in the inpatient and outpatient services. Four hours a week.

The Staff

320 Medical Jurisprudence

Lectures on the legal and ethical rights of physicians, and on the legal problems with which the physician comes in contact. One hour a week for sixteen weeks.

The Staff

325-26 Clinical Clerkships

Training with bed patients under individual instruction designed to develop ability in examination of patients and case taking as well as practice in clinical microscopy. Eight weeks.

The Staff

327-28 Clinical Pathological Conferences I

Required in the third year. Correlation of clinical and post-mortem findings: detailed case description from the clinical point of view followed by demonstrations of post-mortem findings. One hour a week.

Brown, Choisser

339-40 Therapeutic

Conferences I

Conferences designed to emphasize the application of pharmacological principles to the problems of clinical medicine. One hour a week.

Staff of Medicine and Pharmacology

349-50 Medical Conferences

Two hours a week.

The Staff

421-22 Outpatient Clinics

Individual case studies under personal supervision of the Staff. Daily clinics on current medical problems and seminars stressing physiological aspects of diseases. Individual examinations and instruction in medical specialties. University and Emergency hospitals. Eight weeks.

The Staff

- 423-24 *Clinical Clerkship* The Staff
Available at the University, Emergency, Mt. Alto, and Walter Reed
hospitals. Eight weeks.
- 427-28 *Clinical Pathological Conferences II* Brown, Choisser
Required in the fourth year. Continuation of 327-28. One hour a
week, in rotation.
- 439-40 *Therapeutic Conferences II* Staff of Medicine and Pharmacology
Continuation of 339-40. One hour a week.

MILITARY SCIENCE AND TACTICS *

Joseph Augustine Connor, Jr., M.D., Major, Medical Corps, United States Army, *Professor of Military Science and Tactics, Executive Officer*

129-30 *Elementary Course, Senior Division ROTC* Connor (First Year)

World situation, national defense, and ROTC (3); military obligations of citizenship (1); organization of the Army (10); organization of the Medical Department (5); courtesies and customs of the Service (2); military law (4); military training (2); medical military history (1); military administration (3); examination and discussion (1).

247-48 *Elementary Course, Senior Division ROTC* Connor (Second Year)

World situation, national defense, and ROTC (3); organization and employment of medical service of field army (5); duties of the surgeon (3); medical service, zone of communications (3); medical service, zone of interior (3); medical supply (3); introduction to map reading (4); health and national security (2); first aid, bandaging, and splinting (5); examination and discussion (1).

329-30 *Advanced Course, Senior Division ROTC* ‡ Connor (First Year)

World situation, national defense, and ROTC (3); military preventive medicine (20); field medicine and surgery (6); army graduate professional education program (1); army career (1); examination and discussion (1).

429-30 *Advanced Course, Senior Division ROTC* ‡ Connor (Second Year)

World situation, national defense, and ROTC (3); military preventive medicine (11); medical aspects of atomic warfare (2); medical aspects of chemical warfare (2); military psychiatry (5); personnel management (3); military medical research development (3); organized reserve corps (1); mobilization (1); examination and discussion (1).

* Figures in parenthesis indicate the number of hours devoted to the subject.
‡ Students in the advanced course are selected from those who satisfactorily complete the elementary course, or have one year active federal service.

NEUROLOGY AND NEUROLOGICAL SURGERY

Walter Freeman, Ph.D., M.D., *Professor of Neurology, Executive Officer*

James Winston Watts, B.S., M.D., *Professor of Neurological Surgery*

Hyman David Shapiro, M.D., *Associate Clinical Professor of Neurology*

Robert Henry Groh, B.S., M.D., *Assistant Clinical Professor of Neurology*

Paul Chodoff, A.B., M.D., *Associate in Neurology*

James Peter Murphy, B.S., M.D., *Associate in Neurological Surgery*

George Davis Weickhardt, M.D., *Clinical Instructor in Neurology*

Hugo Victor Rizzoli, A.B., M.D., *Clinical Instructor in Neurological Surgery*

Jonathan Marshall Williams, M.D., *Clinical Instructor in Neurological Surgery*

Oscar Legault, A.B., M.D., *Clinical Instructor in Neurology*

John William Kemble, A.B., M.D., *Clinical Instructor in Neurology*

Marion Ballard Richmond, B.S., M.D., *Clinical Instructor in Neurology*

249-50 *Neurology (elective)*

Freeman

Methods of study of the nervous system. Gross and microscopic preparations, embryology, comparative anatomy, stimulation and extirpation, human pathology, etc. Laboratory demonstrations. One hour a week.

331 *Neurology*

Shapiro and Staff

Systematic lectures with lantern slides, illustrating the chief neurologic syndromes and their anatomic bases. One hour a week.

333-34 *Neurology and Neurological Surgery, Clinical Clerkship*

Freeman and Staff

Instruction in history, physical examination, ordinary clinical procedures. Attendance at neurological operations. Gallinger Hospital. Four students in rotation, two weeks.

335-36 *Neurological Conference*

Freeman and Staff

Clinical conference one afternoon a week followed by clinicopathologic study of specimens from current necropsies. Gallinger Hospital. Two and one-half hours a week.

431-32 *Neurology Clinic*

Shapiro and Staff

Neurological outpatient clinic. Consultation of staff on ambulatory cases, demonstration of diagnostic procedures, disposition of neuropsychiatric cases. Discussion of neuropathologic material. University Hospital. Two hours a week.

433-34 *Neurosurgery*

Watts and Staff

Clinical demonstrations in surgery of the brain, spinal cord, and peripheral nerves. Emphasis is laid upon fundamentals and upon the possibilities of surgery in the relief of symptoms. University and Gallinger hospitals. Section of four students, two hours a week.

OBSTETRICS AND GYNECOLOGY

- John Parks, M.S., M.D., *Professor of Obstetrics and Gynecology, Executive Officer*
- Radford Brown, M.D., *Clinical Professor of Obstetrics and Gynecology*
- Jacob Kotz, M.D., *Clinical Professor of Obstetrics and Gynecology*
- Henry Lauran Darner, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
- Herbert Percy Ramsey, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
- Robert Henry Barter, M.D., *Associate Professor of Obstetrics and Gynecology*
- George Nordlinger, A.B., M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- Laurence Lee Cockerille, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
- Samuel Mayer Dodek, A.M., M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
- Clayton Howard Hixson, M.D., *Associate in Obstetrics and Gynecology*
- Henry John Russell McNitt, B.S. in Med., M.D., *Associate in Obstetrics and Gynecology*
- Russel Jon Jansen, M.D., *Associate in Obstetrics and Gynecology*
- Howard Pope Parker, A.B., M.D., *Associate in Obstetrics and Gynecology*
- Roger O'Donnell, Jr., A.B., M.D., *Associate in Obstetrics and Gynecology*
- James Albert Dusbabek, M.D., *Associate in Obstetrics and Gynecology*
- Barton Winters Richwine, M.D., *Associate in Obstetrics and Gynecology*
- Clarence Kendall Fraser, Ph.B., M.D., *Associate in Obstetrics and Gynecology*
- Katherine Elizabeth Parker, A.M., M.D., *Clinical Instructor in Obstetrics and Gynecology*
- William Dandridge Terrell, Jr., M.D., *Clinical Instructor in Obstetrics and Gynecology*
- Samuel Hazen Shea, M.D., *Clinical Instructor in Obstetrics and Gynecology*
- Julius Robert Epstein, M.D., *Clinical Instructor in Obstetrics and Gynecology*
- Morton Selwyn Kaufman, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*

- Floyd Sterling Rogers, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Neel Jack Price, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Rufus Martin Roll, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Caroline Jackson, A.M., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Jeremiah Keith Cromer, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Jed Williams Pearson, Jr., A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Thomas Miles Leonard, Ph.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 William Thurston Lady, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Albert Seymour Bright, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Shirley Sue Martin, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Charles Henry Nash, Jr., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Roland Essig Bieren, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Alexander Le Sueur Russell, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Donald Walters, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Thomas Ashton Wilson, M.D., *Clinical Instructor in Obstetrics and Gynecology*

54 *Normal Obstetrics* Fraser, Dodek
 Lectures and demonstrations on the physiology and management of normal pregnancy. One hour a week.

337-38 *Abnormal Obstetrics* Nordlinger, Parks
 Lectures and demonstrations on the complications of pregnancy. One hour a week.

343 *Gynecology* Brown
 Lectures and demonstrations on the principles of gynecology. One hour a week.

344 *Marriage and Marital Problems* Ramsey, Nordlinger
 A course of instruction in marriage counseling and planned parenthood. One hour a week.

348 *Female Endocrinology and Operative Gynecology* Kotz, Darner

Lectures on the physiology and pathology of the female endocrine system and on principles of gynecological surgery. One hour a week.

401-2 *Manikin Demonstrations* Lady

The mechanism of labor and various types of operative delivery demonstrated to sections of the class in weekly sessions.

441-42 *Clinical Obstetrics* Parks and Staff

Senior students participate in prenatal and postnatal clinic care; make postpartum home calls; observe the course of labor and deliver patients under supervision; attend biweekly departmental conferences and daily ward rounds in the University and Gallinger hospitals.

443-44 *Clinical Gynecology* Parks and Staff

Senior students observe and participate in the gynecological work of clinics, operating rooms, and gynecological services of the University and Gallinger hospitals.

OPHTHALMOLOGY

Ronald Atmore Cox, A.B., M.D., *Professor of Ophthalmology, Executive Officer*

Ernest Alfred Watson Sheppard, M.D., C.M., *Clinical Professor of Ophthalmology*

Richard Wallace Wilkinson, M.S., M.D., *Associate in Ophthalmology*

Sterling Bockoven, M.D., *Associate in Ophthalmology*

Walter Joseph Romejko, M.D., *Clinical Instructor in Ophthalmology*

Carmon Robert Naples, B.S., M.D., *Clinical Instructor in Ophthalmology*

Micollus Noel Stow, M.D., D.M.S., *Clinical Instructor in Ophthalmology*

James Spencer Dryden, M.D., *Clinical Instructor in Ophthalmology*

William Paxson Chalfant, Jr., M.D., *Clinical Instructor in Ophthalmology*

William Joseph Graham Davis, A.B., M.D., *Clinical Instructor in Ophthalmology*

351-52 *Ophthalmology*

The Staff

A lecture course presenting the principles of ophthalmology, with special reference to topics of importance to the general practitioner. One hour a week for sixteen weeks.

447 *Clinic*

The Staff

During medical outpatient service, each student is given individual instruction in the ophthalmological aspects of systemic disease.

OTO-RHINO-LARYNGOLOGY

- Daniel Bruce Moffett, A.B., M.D., *Professor of Oto-rhino-laryngology, Executive Officer*
 William Herndon Jenkins, M.D., *Clinical Professor of Oto-rhino-laryngology*
 Leroy Lee Sawyer, Jr., A.B., M.D., *Assistant Clinical Professor of Oto-rhino-laryngology*
 David Davis, A.B., M.D., *Associate in Oto-rhino-laryngology*
 Aubrey David Fischer, M.D., *Associate in Oto-rhino-laryngology*
 Joel Norton Novick, M.S., M.D., *Clinical Instructor in Oto-rhino-laryngology*
 Catharine Birch, A.B., M.D., *Clinical Instructor in Oto-rhino-laryngology*
 Homer King Vann, A.B., M.D., *Clinical Instructor in Oto-rhino-laryngology*
 James Jerry McFarland, Jr., B.S., M.D., *Clinical Instructor in Oto-rhino-laryngology*
 Thomas Frasier Williams, M.D., *Clinical Instructor in Oto-rhino-laryngology*
 Edward Clifford Jennings, B.S., M.D., *Clinical Instructor in Oto-rhino-laryngology*

451 *Oto-rhino-laryngology*

Moffett, Jenkins

Lectures and demonstrations on anatomy, physiology, and diseases of the ear, nose, and throat. One hour a week.

454 *Bronchoscopy*

Davis

A series of lectures on the fundamental principles and the use of instruments, including both the bronchoscope and esophagoscope. One hour a week for two weeks.

456 *Clinic*

The Staff

Practical clinical instruction in the diagnosis and treatment of diseases of the ear, nose, and throat. University Hospital. One and one-half hours twice a week.

PATHOLOGY

Roger Morrison Choisser, B.S., M.D., *Professor of Pathology, Executive Officer*

Thomas Martin Peery, A.B., M.D., *Professor of Pathology*

Carl Hunt Wells, B.S., M.D., *Associate Professor of Pathology*

Robert Pelley Hill, B.S., M.D., *Assistant Professor of Pathology*

SEMINAR LECTURERS

Elson Bowman Helwig, B.S., M.D., *Professorial Lecturer in Pathology*

Hans Frank Smetana, M.D., *Professorial Lecturer in Pathology*

Henry Rappaport, M.D., *Professorial Lecturer in Pathology*

James Earle Ash, Jr., M.D., *Professorial Lecturer in Pathology*

Elizabeth Maplesden Ramsey, A.B., M.D., *Professorial Lecturer in Pathology*

259-60 *Pathology*

Choisser and Staff

Malformations, inflammations, degenerations, and neoplasms; special pathology of the organs and specific diseases. The laboratory work consists of the gross and microscopic study of diseased tissues. Necropsies are held regularly at the University and Gallinger hospitals.

307 *Necropsy (elective)*

The Staff

Students assist in the performance of necropsies. Fresh gross specimens and microscopic sections from each case are presented at weekly conferences. Current literature relating to cases is reviewed and presented by the students.

327-28 *Clinical Pathological Conference*

Choisser, Brown

Required in the third and fourth years. Case histories are presented and discussed by members of the staff and student body; necropsy and clinical findings are compared, and gross and microscopic specimens examined. One hour a week.

460 *Research*

Choisser

Hours and credits to be arranged.

PEDIATRICS

- Preston Alexander McLendon, B.S., M.D., *Professor of Pediatrics, Executive Officer*
- Margaret Mary Nicholson, A.B., M.D., *Clinical Professor of Pediatrics*
- Edward Lewis, M.D., *Clinical Professor of Pediatrics*
- William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*
- Lewis Kaigler Sweet, A.B., M.D., *Adjunct Clinical Professor of Pediatrics*
- Mabel Harlakenden Grosvenor, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
- John Augustine Washington, A.B., B.S., M.D., *Assistant Clinical Professor of Pediatrics*
- Aaron Nimetz, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
- Dorothy Steine Jaeger-Lee, M.D., *Assistant Clinical Professor of Pediatrics*
- George Maksim, M.D., M.S. in Ped., *Assistant Clinical Professor of Pediatrics*
- Reginald Spencer Lourie, M.D., *Associate in Pediatrics—Psychiatry*
- William Allen Howard, A.B., M.D., *Associate in Pediatrics*
- John Phillip McGovern, B.S., M.D., *Associate in Pediatrics*
- John Howell Peacock, B.S., M.D., *Clinical Instructor in Pediatrics*
- Herbert Harold Diamond, M.D., *Clinical Instructor in Pediatrics*
- Reginald Henry Mitchell, M.D., *Clinical Instructor in Pediatrics*
- Maynard Irving Cohen, A.B., M.D., *Clinical Instructor in Pediatrics*
- Mary Katherine Laurence Sartwell, A.B., M.D., *Clinical Instructor in Pediatrics*
- Sydney Ross, M.D., *Clinical Instructor in Pediatrics*
- Charles Frederick Stiegler, A.B., M.D., *Clinical Instructor in Pediatrics*
- Hugh Gambel Clark, A.B., M.D., *Clinical Instructor in Pediatrics*
- Herbert Dudley Glick, B.M., M.D., *Clinical Instructor in Pediatrics*

256 *Pediatrics*

McLendon and Staff

Lectures on physiology of the newborn, development, infant nutrition, diseases of the newborn, common anomalies and system illnesses of childhood. Medical School. Two hours a week.

357-58 *Clinical Clerkship—General Pediatrics*

Nicholson and Staff

General pediatric diseases and the newborn. Emphasis on history taking and physical examination. Daily ward rounds. Gallinger Municipal Hospital. Five students in rotation, two weeks.

- 359-60 *Clinical Clerkship—Contagious Diseases* Grosvenor and Staff
Preventive and quarantine measures. Daily ward rounds and conferences. Gallinger Municipal Hospital. Five students in rotation, two weeks.
- 361-62 *Clinical Conference* McLendon and Staff
Required in third year. Presentation and discussion of current patient problems. Gallinger Municipal Hospital. One hour a week.
- 365 *Clinical Conference I* McLendon and Staff
Required in the third year. Staff and student discussion of diagnosis and management. Medical School. One hour a week.
- 457-58 *Clinical Clerkship* McLendon and Staff
Full time including assignment to night and holiday admissions. Case studies on wards under direct Resident supervision. Ward rounds with Staff and Residents. Childrens Hospital. Twelve students, six weeks.
- 459-60 *Outpatient Clinics* Washington and Staff
Work in Medical and Specialty clinics including surgery, allergy, X-ray, child welfare, cardiology, dermatology, neurology, and child guidance. Childrens Hospital.
- 461-62 *Clinico-pathological Conference* McLendon and Staff
Clinical and pathological discussion of recent patient history and laboratory data. Childrens Hospital.
- 463-64 *Group Conferences* McLendon and Staff
Discussion of clinical problems of diagnosis and treatment of current patients. Childrens Hospital. Twice a week.
- 465 *Clinical Conference II* McLendon and Staff
Required in the fourth year. Case presentation by fourth-year students. Staff and student discussion of diagnosis and management. Medical School. One hour a week.

PHARMACOLOGY

Paul Kenneth Smith, Ph.D., *Professor of Pharmacology, Executive Officer*

Erwin Ellis Nelson, M.D., Ph.D., *Adjunct Clinical Professor of Pharmacology*

Hugh Hackland Darby, Ph.D., *Research Professor of Biophysics*

Murray Finkelstein, Ph.D., *Assistant Professor of Pharmacology*

Edward Alpen, Ph.D., *Assistant Professor of Pharmacology*

261 *Pharmacology*

The Staff

Lectures and conferences concerning the interaction of drugs and biological systems as a basis for the rational therapy of disease. Five hours a week.

263 *Pharmacology Laboratory*

The Staff

Laboratory instruction and demonstrations designed to complement the above course. Five hours a week.

265 *Chemotherapy*

The Staff

Five lectures a week for three weeks. Designed for graduate students.

361-62 *Pharmacological Research*

The Staff

Primarily for those properly qualified graduate and medical students seeking careers in pharmacology. Hours and credits to be arranged.

363-64 *Pharmacology Seminar (1-1)*

The Staff

Recent advances in pharmacology. For those interested in pharmacological research. Two hours a week.

369-70 *Clinical Pharmacology*

The Staff

Discussions of the pharmacological basis of therapeutics. One hour a week.

479-80 *Special Methods in Research*

The Staff

A course to familiarize the student with advanced chemical and physiological methods employed in pharmacological investigations. Hours and credits to be arranged.

PHARMACY

- Charles Watson Bliven, M.S., *Professor of Pharmacy, Executive Officer*
William Paul Briggs, M.S., Sc.D., *Professorial Lecturer in Pharmacy*
Jane Gass, M.S., *Assistant Professor of Pharmacology and Pharmacognosy*
Salvatore Joseph Greco, Ph.D., *Assistant Professor of Pharmacy*
John Watson Schermerhorn, Ph.D., *Assistant Professor of Pharmaceutical Chemistry*
Carson Gray Frailey, A.B., LL.B., *Lecturer on Pharmaceutical Law*
Harold Jerome Bobys, A.B., C.P.A., *Lecturer on Pharmaceutical Administration*
David Lucian Rice, B.S. in Phar., *Instructor in Hospital Pharmacy*
Carmel Miriam Snow, B.S. in Phar., *Instructor in Hospital Pharmacy*

SEMINAR LECTURERS

- James Johnson Durrett, M.S., Phar.G., M.D., *Professorial Lecturer on Drug Control Problems*
Carson Peter Frailey, Phar.D., Sc.D., *Professorial Lecturer on Industrial Pharmacy*
Frederick John Cullen, Phar.G., M.D., *Professorial Lecturer on Drug Manufacture*
James Albert Horton, LL.B., *Professorial Lecturer on Drug Trade Regulations*
John Christian Krantz, Jr., Ph.D., *Professorial Lecturer on Pharmaceutical Research*
Justin Lawrence Powers, Ph.D., *Professorial Lecturer on Official Drug Standards*
Robert Lee Swain, Phar.D., LL.B., *Professorial Lecturer on Contemporary Pharmacy*
George Potter Larrick, *Professorial Lecturer on Drug Control*
Robert Philip Fischelis, B.S., Phar.D., Sc.D., *Professorial Lecturer on Pharmaceutical Organizations*

Minimum requirements for the degrees.—See pages 123-24.

FIRST GROUP

2 Orientation in Pharmacy (1)

Bliven

A general survey of the field of pharmacy; organizations in the health professions; official compendia. Morning.

- 21-22 General Pharmacy (5-5)** Greco, Schermerhorn
Essential pharmaceutical processes; the theory and manufacture of pharmacopoeial and formulary galenical and inorganic chemical preparations; the pharmaceutical usage of certain classes of substances and preparations. Laboratory fee, \$12 a term. Lecture (3 hours)—morning; laboratory (6 hours)—afternoon.
- 23 Pharmacognosy (3)** Gass
Macroscopic and microscopic. Prerequisite: Botany 1. Laboratory fee, \$7. Lecture (2 hours)—afternoon; laboratory (3 hours)—afternoon.
- 24 History, Literature, and Ethics of Pharmacy (1)** Briggs
The development of the profession of pharmacy and the literature of pharmacy. Morning.
- 25 Pharmaceutical Calculations (3)** Bliven
The system of weights and measures and their application in the practice of pharmacy. Morning.

SECOND GROUP

- 102 Dispensing Pharmacy (4)** Greco
Compounding of typical prescriptions and a study of incompatibilities. Prerequisite: Pharmacy 22; concurrent registration: Pharmacy 110. Laboratory fee, \$12. Lecture (2 hours)—afternoon; laboratory (6 hours)—afternoon.
- 103 Dispensing Pharmacy (4)** Greco
Continuation of Pharmacy 102. Laboratory fee, \$12. Lecture (2 hours); laboratory (6 hours)—afternoon.
- 105-6 Pharmacology I (2-2)** Gass
The general principles of pharmacology; locally acting drugs; chemotherapeutic agents; antibiotics; antianemia drugs; endocrine drugs; vitamins. Prerequisite or concurrent registration: Physiology 115. Morning.
- 107 Pharmacy Accounting (3)** Bobys
The financial records required in the operation of a pharmacy. Morning.
- 110 Chemistry and Pharmacy of Medicinal Products (3)** Schermerhorn
A study of the chemistry, structural relationship to action, and uses of the official and important non-official synthetic and natural organic medicinal compounds. Prerequisite or concurrent registration: Chemistry 152. Morning.
- 111 Chemistry and Pharmacy of Medicinal Products (3)** Schermerhorn
A continuation of Pharmacy 110, including laboratory work on the syntheses, chemical and physical properties, and incompatibilities of important organic medicinal products. Laboratory fee, \$12. Lecture (2 hours)—morning; laboratory (3 hours)—afternoon.

- 151 *Advanced Pharmacognosy I (3)* Gass
Microscopic. Prerequisite: Pharmacy 23. Laboratory fee, \$12. Time to be arranged.
- 165-66 *Pharmacology II (3-3)* Gass
Drugs acting on the central nervous system, the autonomic nervous system, and on specific tissues; toxicology; diagnostic drugs; biological assays. Prerequisite: Physiology 115 and 117; Pharmacy 106. Pharmacy 166, laboratory fee, \$12. Fall term: morning. Winter term: lecture (2 hours)—morning; laboratory (3 hours)—afternoon.
- 167-68 *Pharmacology III (3-3)* Gass
Laboratory work in pharmacological technique. Prerequisite: Pharmacy 106. Prerequisite or concurrent registration: Pharmacy 165. Laboratory fee, \$12 a term. Time to be arranged.
- 172 *Advanced Dispensing Pharmacy (3)* Greco
The study of special problems in dispensing pharmacy. Prerequisite: Pharmacy 103. Laboratory fee, \$12. Time to be arranged.
- 173 *Quantitative Pharmaceutical Analysis (3)* Schermerhorn, Bliven
Drug analysis. Prerequisite: Chemistry 22. Laboratory fee, \$12. Lecture (1 hour); laboratory (6 hours). Time to be arranged.
- 176 *Pharmaceutical Law (2)* C. G. Frailey
Morning.
- 178 *Pharmacy Management (3)* Briggs
Policies and operations relating to the management of a pharmacy. Morning.
- 182 *Advanced Pharmacology I (2)* Gass
Special problems in the field of pharmacology. Prerequisite or concurrent registration: Pharmacy 166. Time to be arranged.
- 188 *Survey (1)* The Staff
A symposium covering the various phases of pharmacy. Morning.
- 192 *Hospital Pharmacy (2)* Rice, Snow
Organization and function of hospitals; organization and operation of a hospital pharmacy; professional and sickroom supplies; prescription practice in the University Hospital pharmacy. Prerequisite: Pharmacy 103. Lecture (1 hour)—morning; laboratory (3 hours)—time to be arranged.
- 194 *Manufacturing Pharmacy (3)* Rice, Snow
The manufacture of bulk pharmaceuticals in the University Hospital pharmacy. Elective for seniors. Lecture (1 hour)—afternoon; laboratory (6 hours)—time to be arranged.

THIRD GROUP*

201-2 *Survey of Pharmaceutical Literature (1-1)*

Assigned library research on the development of pharmaceutical literature.

203-4 *Special Problems in General Pharmacy (2-2)*

Investigations of problems involved in the manufacture of pharmaceutical preparations on a laboratory scale. Laboratory fee, \$12 a term.

206 *Pharmaceutical Technology (4)*

A study of advanced manufacturing pharmacy, including formula development for the different types of preparations. Laboratory fee, \$12. Lecture (2 hours); laboratory (6 hours).

215-16 *Advanced Pharmacology II (3-3)*

Special studies on biological assay methods. Laboratory fee, \$12 a term. Lecture (1 hour); laboratory (6 hours).

221-22 *Chemistry of Naturally Occurring Organic Medicinal Products (5-5)*

A study of the isolation, chemistry, and relationship between the constitution and physiologic action of alkaloids, fats and sterols, terpenes, carbohydrates, glycosides, and the various biological products. Laboratory fee, \$12 a term. Lecture (3 hours); laboratory (6 hours).

223-24 *Chemistry of Synthetic Organic Medicinal Products (5-5)*

A study of the chemistry and relationship between the structure and physiologic action of hydrocarbons and their derivatives, nitrogen compounds, oxygen compounds, sulfur compounds, and organo-metallic compounds. Laboratory fee, \$12 a term. Lecture (3 hours); laboratory (6 hours).

225 *Determination of Physical Constants (2)*

A laboratory and lecture study of the determination of physical constants of medicinal products. Laboratory fee, \$12. Lecture (1 hour); laboratory (3 hours).

227 *Food and Drug Analysis (4)*

A study of the composition of some common foods and food products. Laboratory fee, \$12. Lecture (2 hours); laboratory (6 hours).

231 *Pharmacology of Anesthetic Drugs (4)*

Theoretical consideration of the principles of anesthesiology and laboratory study of the action of anesthetic drugs. Laboratory fee, \$12.

234 *Pharmacology of Autonomic Drugs (4)*

A study of action and interaction of drugs principally influencing the autonomic nervous system. Laboratory fee, \$12.

* The graduate courses, which are listed in the third group, will not be offered until September 1951.

236 *Experimental Toxicology (4)*

Pharmacological action of toxic drugs correlated with chemical and pathological studies. Laboratory fee, \$12.

251-52 *Graduate Seminar (1-1)*

Current problems and trends in pharmacy. Required of all students registered for the Master's degree.

295-96 *Research (arr.)*

Investigations of special problems in the major field of study. Credits and fees to be arranged.

299-300 *Thesis (3-3)*

Laboratory fee, \$14 a term.

PHILOSOPHY

Charles Edward Gauss, Mus.B., Ph.D., *Elton Professor of Philosophy,*
Executive Officer

Mary Carman Rose, Ph.D., *Instructor in Philosophy*

The major in Philosophy (Field-of-Study).—The major provides an opportunity for the student to become acquainted with the history and fields of philosophy and with the methods of philosophical analysis. For details see the pamphlet, which is available in the Office of the Dean of Columbian College, or consult the Executive Officer of the Department.

Requirements for the Master's degree.—In addition to the requirements for the Bachelor's degree with a major in Philosophy the following courses are prerequisite to candidacy: Philosophy 111-12, 113, 121-22, 131. For the Master's degree the following courses are required: Philosophy 201 or 202, 211-12, 213-14, and 216. A reading knowledge examination in either French or German must be passed before the second half of the work is started.

FIRST GROUP

- 51-52 *Introduction to Philosophy (3-3)* The Staff
 A critical introduction to the problems of modern philosophy in relation to scientific and social developments since the Renaissance. Morning and evening sections. (Also offered 1950 summer term.)

SECOND GROUP

- 111-12 *History of Philosophy (3-3)* Rose
 History of western philosophy from Thales to Kant. Morning. (Also offered 1950 summer term.)
- 113 *History of Nineteenth and Twentieth Century Philosophy (3)* Gauss
 Continuation of Philosophy 111-12. Prerequisite: Philosophy 111-12. 1950-51 and alternate years, evening.
- 121-22 *Logic and Scientific Method (3-3)* Rose
 The study of formal logic and the means of investigation and description employed in the sciences; theory of scientific inference and prediction. Morning. (Also offered 1950 summer term.)
- 131 *Ethics (3)* Rose
 An examination of ethical theories, the relation of ethics to social science and psychology. Evening.
- 142 *Metaphysics (3)* Rose
 The problems of metaphysics in the light of their development in contemporary forms. 1950-51 and alternate years, evening.

- 162 *Aesthetics* (3) Gauss
The problems of appreciation and judgment in the arts, and of theories of the process of artistic creation. Emphasis on contemporary arts and criticism. 1950-51 and alternate years, morning.
- 171-72 *American Philosophy* (3-3) Gauss
A general history of philosophy in the United States and its relation to European thought. Evening.
- 180 *Philosophy of History* (3) Gauss
Problems of historical knowledge and explanation. Critique of philosophies of history. 1951-52 and alternate years.
- 193 *Topics in Contemporary Philosophy* (3) Gauss
Intensive study of selected topic of moment. 1951-52 and alternate years.
- 199-200 *Proseminar: Readings for the Major* (3-3) The Staff
Conferences and group discussions. Time to be arranged.

THIRD GROUP

- 201-2 *Readings and Research* (3-3) The Staff
Advanced readings and reports. Investigation of special problems. Time to be arranged.
- 211-12 *Seminar in Plato and Aristotle* (3-3) The Staff
1950-51 and alternate years, evening.
- 213-14 *Seminar in Seventeenth Century Philosophy* (3-3) The Staff
1951-52 and alternate years.
- 216 *Seminar in Kant* (3) The Staff
1951-52 and alternate years.
- 299-300 *Thesis* (3-3) The Staff

PHYSICAL EDUCATION FOR MEN *

William Henry Myers, A.M., *Professor of Physical Education for Men, Executive Officer*

Cecil Wentworth Morgan, Ph.D., *Professorial Lecturer in Physical Education*

Joseph Henry Krupa, M.S., *Associate Professor of Physical Education for Men*

Raymond George Hanken, B.S. in P.E., *Assistant Professor of Physical Education for Men*

Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Assistant Professor of Physical Education for Men*

Ralph Waldo Foster, A.M., *Lecturer in Physical Education*

William Jennings Reinhart, B.B.A., *Associate in Physical Education for Men*

John Howell Rowland, LL.B., *Associate in Physical Education for Men*

Eugene Hugh Sherman, Sr., B.S., *Associate in Physical Education for Men*

This Department includes all the recognized athletic activities of the men students of the University.

Two years of physical education (Physical Education 1-2 and 11-12) are required of all men for graduation, except those students exempt under the regulations stated on page 19.

Upon entering the University, all freshmen or other undergraduate students who have not fulfilled the physical education requirement are given a medical examination. Assignments for medical examinations will be given at the time of registration. The students who satisfy the requirements of the medical examination are then given a physical efficiency test in the general bodily skills of agility, endurance, and strength; and in swimming. If the physical efficiency test is passed, the student may elect from the following list of activities:

Setting-up Exercises (stretching exercises)

Body Building Exercises (gymnastic apparatus and weight lifting skills)

Competitive Exercises (modified games and sports)

Swimming Exercises (distance, speed, and life saving)

If the physical efficiency test is not passed, the student will be assigned to a class for training in the above activities in the order listed.

The Department furnishes gymnasium uniforms and personal equipment upon a small payment.

Minimum requirements for the Single Major and Subject-Certification Teacher's Course.—See pages 130-131 and 132.

Minimum requirements for the Single-Major Teacher's Course.—See pages 130-31 and 133.

* The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of physical education.

Minimum requirements for the Physical Education and Recreation Course.—See pages 130-32 and 133.

Minimum requirements for the minor.—Prerequisite: Physical Education 43-44, 47, 49, and 58. Required: twelve credit hours of second-group courses in Physical Education, including 103, 113 or 114, and 138.

FIRST GROUP

- 1-2 *Freshman Physical Education** (2-2) The Staff
Four periods of supervised activity a week. Locker and towel fee, ‡ \$2 a term. Assignment for activities and time to be arranged.
- 11-12 *Sophomore Physical Education** (2-2) The Staff
Four periods of supervised activity a week. Locker and towel fee, ‡ \$2 a term. Assignment for activities and time to be arranged.
- 43-44 *Techniques of Physical Education Motor Activities* (2-2) The Staff
Fundamental skills, rules, and organization. Locker and towel fee, ‡ \$2 a term. Morning and afternoon sections.
- 45-46 *Methods of Teaching Physical Education Activities for Secondary Schools I* (2-2) The Staff
Methods and materials for teaching (1) recreational dance—folk, square, and social dance; (2) individual and dual sports—tennis, golf, archery, swimming, badminton, bowling. Locker and towel fee, ‡ \$2 a term. Afternoon.
- 47 *Introduction to Physical Education* (2) Myers
An orientation course presenting the problems of physical education, vocational analysis, scientific foundations, and scope of field. Morning.
- 48 *Introduction to Recreation* (2) Myers
The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary; types of leadership needed. Time to be arranged.
- 49 *Human Anatomy* (3) Tate
The structure of the human body. Basic course for physical education majors. Also open to both men and women not majoring in physical education. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 50 *Kinesiology* (3) Tate
A study of the anatomical mechanism of movement, analysis of the action of muscles in physical education activities. Prerequisite: an approved course in anatomy. Morning.
- 51-52 *Physical Education in the Elementary School* (2-2)
Physical growth and development of the child and adolescent. Survey of age characteristics and organization of physical education activities

* Freshmen and sophomores in the School of Engineering and the School of Pharmacy are required to take two, instead of four, periods of physical education a week for which they receive one, instead of two, credits a term.

‡ The locker and towel fee is required for registration in one or more of the activity courses.

for the various age levels in elementary school, playground, and settlement house programs. Methods and materials in tumbling, games, rhythms, and self-testing activities. Afternoon.

58 *First Aid and Care of Athletic Injuries* (2) Myers, Lawrence

Prevention and emergency care of injuries of all types, with special reference to first aid, bandaging, and massage. A practical course. Prerequisite: Biology 1-2 or Zoology 1-2. Afternoon.

SECOND GROUP

103 *History and Principles of Physical Education* (3) Atwell
Survey of history as it relates to contemporary physical education. Study of aims, objectives, and philosophy of physical education. Morning.

105-6 *Corrective Physical Education and Physical Examinations* (3-3) Lawrence

Cause and correction of faulty body mechanics, physical examination methods for the diagnosis of postural defects, prescription of exercises and program adaptation. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.

109-10 *Leadership Organization in the Intramural Program* (2-2) Krupa

Principles of administration, organization, and supervision of intramural activities in the physical education program of the junior high school, senior high school, and college. Afternoon.

113-14 *Methods and Practice in Teaching Physical Education Activities* (2-2) The Staff

Principles and methods applied to learning and teaching physical education activities. Supervised laboratory. Morning and afternoon sections.

115-16 *Methods of Teaching Physical Education Activities for Secondary Schools II* (2-2) The Staff

Locker and towel fee,* \$2 a term. Section A (women): modern dance; team sports—field hockey, basketball, softball, soccer, speedball, volleyball. Afternoon. Section B (men): Sports—football, basketball, baseball, track and field. Afternoon.

121 *School and Community Health Programs* (3) _____

Health services, healthful environment, health instruction, sources of material for general health knowledge. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.

122 *Methods and Materials of Health Education* (3) _____

Organization and presentation of health materials for each age level. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.

* The locker and towel fee is required for registration in one or more of the activity courses.

- 131 *Tests and Measurements in Physical Education* (3) Atwell
Critical survey of tests in physical activities, methods of test construction, elementary statistics. Morning.
- 132 *Camp Leadership* (1) _____
Survey course in camp counseling. Afternoon.
- 133-34 *Observation and Practice Teaching* (3-3) Atwell, Myers
Assignments are made to schools in Washington and the vicinity. Practice teaching fee, \$8 a credit hour. Time to be arranged.
- 136 *Survey of Dance History and Dance Forms* (3) Burtner
The development of dance from primitive ritual to present day recreational and art forms of the dance. Includes ethnologic dance, practice and discussion of fundamental movement techniques and composition. Evening.
- 138 *Organization and Administration of Physical Education* (3) Atwell, Myers
Organization and administration of physical education programs in elementary and secondary schools and in colleges. Study of plants, fields, equipment, and programs. Morning.
- 151-52 *Group Leadership Activities I* (3-3)
Fall term: groups and their significance, group work principles and methods, professional and volunteer leaders, organization and development programs. Winter term: application to social-recreational activities. 1951-52 and alternate years, evening.
- 153-54 *Group Leadership Activities II* (3-3) Foster
Fall term: organization and direction of physical recreation programs. Winter term: organization and direction of special recreational activities, such as arts and crafts, dramatics, group singing, and nature walks. 1950-51 and alternate years, evening.
- 161 *Community Organization for Recreation* (3) Brightbill
Resources, principles, and methods in organizing community recreation services. Evening.
- 162 *Administration and Supervision of Recreation* (3) Brightbill
Factors and problems in administering recreation including surveys, legislation, program, area, facilities, leadership, finance, and public relations. Evening.

THIRD GROUP

- 211 *Problems in Physical Education* (3) Morgan
For experienced teachers. Organization, supervision, and curriculum problems growing out of current issues; program planning policies; competition. 1950-51 and alternate years, evening.

220 *Problems in Health Education* (3)

Health needs; policies and program planning; use of community resources; promising practices in the field. 1950-51 and alternate years, evening.

231 *Evaluation in Physical Education* (3)

Phillips

Planning the evaluation program; review of outcomes; analysis of tests and standards; administration and interpretation of tests; guidance. 1951-52 and alternate years, evening.

240 *Physical Education for the Atypical* (3)

Morgan

Adaptations of activities to meet the special needs of students with physical disabilities resulting from such conditions as postural deviations, cardiac irregularities, operations, and poliomyelitis. 1951-52 and alternate years, evening.

PHYSICAL EDUCATION FOR WOMEN *

Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women, Executive Officer*

Bernath Eugene Phillips, Ph.D., *Professorial Lecturer in Physical Education*

Helen Bennett Lawrence, A.M., *Associate Professor of Physical Education for Women*

Elizabeth Burtner, A.M., *Associate Professor of Physical Education for Women*

Marjorie Tate, A.M., *Assistant Professor of Physical Education for Women*

Charles Kestner Brightbill, M.B.A., *Lecturer in Physical Education*
Nancy Rupp, B.S., *Instructor in Physical Education for Women*

Helen Taylor Harris, A.M., *Associate in Physical Education for Women*

Louise Packer Seager, *Associate in Physical Education for Women*

Two years of physical education (Physical Education 1-2 and 11-12) are required of all women for graduation, except of students exempt under the regulations stated on page 39. In the fall a complete medical and physical examination is given each student for the purpose of discovering individual needs. Those students whose examinations indicate the desirability of remedial or restricted activity are assigned to a program especially adapted to their needs. This limited program includes moderate sports and individual exercises in small groups under careful supervision.

The required costume for physical education classes may be purchased at the Cooperative Store.

Minimum requirements for the major.—For the first two years in Junior College see page 59. For the last two years in the School of Education see pages 133-34. Students desiring to prepare themselves to teach another subject in addition to physical education may do so by choosing their elective hours in one subject-matter field with the advice of the Dean of the School of Education.

FIRST GROUP

1-2 *Freshman Physical Education (1-1)*

The Staff

One period of fundamentals of health, physical education, and recreation, and two periods of activity a week.

Fundamentals of health, physical education, and recreation; study of the factors involved in the maintenance of health and in the efficient use of the body, and practice in activities adapted for leisure time. Morning and afternoon sections.

Activities: riding, field hockey, folk and square dance, modern dance, bowling, ice skating, roller skating, basketball, badminton.

* The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of physical education.

individual body mechanics, swimming, tennis, softball, archery, golf, canoeing. Locker and towel fee,* \$2 a term. Morning and afternoon sections.

- 11-12 *Sophomore Physical Education (1-1)* The Staff
Activities: same as Physical Education 1-2. Locker and towel fee,* \$2 a term. Two periods a week; morning and afternoon sections.

- 43-44 *Techniques of Physical Education Motor Activities (2-2)* The Staff
Fundamental skills, rules, and organization. Locker and towel fee* \$2 a term. Morning and afternoon sections.

- 45-46 *Methods of Teaching Physical Education Activities for Secondary Schools I (2-2)* The Staff
Methods and materials for teaching (1) recreational dance—folk, square, and social dance; (2) individual and dual sports—tennis, golf, archery, swimming, badminton, bowling. Locker and towel fee* \$2 a term. Afternoon.

- 47 *Introduction to Physical Education (2)* Myers
An orientation course presenting the problems of physical education, vocational analysis, scientific foundations, and scope of field. Morning.

- 48 *Introduction to Recreation (2)* Myers
The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary; types of leadership. Time to be arranged.

- 49 *Human Anatomy (3)* Tate
The structure of the human body. Basic course for physical education majors. Also open to both men and women not majoring in physical education. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.

- 50 *Kinesiology (3)* Tate
A study of the anatomical mechanism of movement, analysis of the action of muscles in physical education activities. Prerequisite: an approved course in anatomy. Morning.

- 51-52 *Physical Education in the Elementary School (2-2)* _____

Physical growth and development of the child and adolescent. Survey of age characteristics and organization of physical education activities for the various age levels in elementary school, playground, and settlement house programs. Methods and materials of tumbling, games, rhythms, and self-testing activities. Afternoon.

- 58 *First Aid and Care of Athletic Injuries (2)* Myers, Lawrence

Prevention and emergency care of injuries of all types, with special reference to first aid, bandaging, and massage. A practical course. Prerequisite: Biology 1-2 or Zoology 1-2. Afternoon.

* The locker and towel fee is required for registration in one or more of the activity courses.

SECOND GROUP

- 103 *History and Principles of Physical Education* (3) Atwell
Survey of history as it relates to contemporary physical education. Study of aims, objectives, and philosophy of physical education. Morning.
- 105-6 *Corrective Physical Education and Physical Examinations* (3-3) Lawrence
Cause and correction of faulty body mechanics, physical examination methods for the diagnosis of postural defects, prescription of exercises and program adaptation. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 109-10 *Leadership Organization in the Intramural Program* (2-2) Krupa
Principles of administration, organization, and supervision of intramural activities in the physical education program of the junior high school, senior high school, and college. Afternoon.
- 113-14 *Methods and Practice in Teaching Physical Education Activities* (2-2) The Staff
Principles and methods applied to learning and teaching physical education activities. Supervised laboratory. Morning and afternoon sections.
- 115-16 *Methods of Teaching Physical Education Activities for Secondary Schools II* (2-2) The Staff
Section A (women): modern dance; team sports—field hockey, basketball, softball, soccer, speedball, volleyball. Afternoon. Section B (men): Sports—football, basketball, baseball, track and field. Locker and towel fee* \$2 a term. Afternoon.
- 121 *School and Community Health Programs* (3) ———
Health services, healthful environment, health instruction, sources of material for general health knowledge. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 122 *Methods and Materials of Health Education* (3) ———
Organization and presentation of health materials for each age level. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 131 *Tests and Measurements in Physical Education* (3) Atwell
Critical survey of tests in physical activities, methods of test construction, elementary statistics. Morning.
- 132 *Camp Leadership* (1) ———
Survey course in camp counseling. Afternoon.

* The locker and towel fee is required for registration in one or more of the activity courses.

133-34 *Observation and Practice Teaching* Atwell, Myers
(3-3)

Assignments are made to schools in Washington and the vicinity. Practice teaching fee, \$8 a credit hour. Time to be arranged.

136 *Survey of Dance History and Dance Forms* Burtner
(3)

The development of dance from primitive ritual to present day recreational and art forms of the dance. Includes ethnologic dance, practice and discussion of fundamental movement techniques and composition. Evening.

138 *Organization and Administration of Physical Education* Atwell, Myers
(3)

Organization and administration of physical education programs in elementary and secondary schools and in colleges. Study of plants, fields, equipment, and program. Morning.

151-52 *Group Leadership Activities I* (3-3)

Fall term: groups and their significance, group work principles and methods, professional and volunteer leaders, organization and development programs. Winter term: application to social and recreational activities. 1951-52 and alternate years, evening.

153-54 *Group Leadership Activities II* (3-3) Foster

Fall term: organization and direction of physical recreation programs. Winter term: organization and direction of special recreational activities, such as arts and crafts, dramatics, group singing, and nature walks. 1950-51 and alternate years, evening.

161 *Community Organization for Recreation* Brightbill
(3)

Resources, principles, and methods in organizing community recreation services. Evening.

162 *Administration and Supervision of Recreation* Brightbill
(3)

Factors and problems in administering recreation including surveys, legislation, program, area, facilities, leadership, finance, and public relations. Evening.

THIRD GROUP

211 *Problems in Physical Education* (3) Morgan

For experienced teachers. Organization, supervision, and curriculum problems growing out of current issues; program planning policies; competition. 1950-51 and alternate years, evening.

220 *Problems in Health Education* (3)

Health needs, policies and program planning, use of community resources, promising practices in the field. 1950-51 and alternate years, evening.

- 231 *Evaluation in Physical Education* (3) Phillips
Planning the evaluation program, review of outcomes, analysis of tests and standards, administration and interpretation of tests, guidance. 1951-52 and alternate years, evening.
- 240 *Physical Education for the Atypical* (3) Morgan
Adaptations of activities to meet the special needs of students with physical disabilities resulting from such conditions as postural deviations, cardiac irregularities, operations, and poliomyelitis. 1951-52 and alternate years, evening.

PHYSICAL MEDICINE

Charles Samuel Wise, B.S., M.D., *Professor of Physical Medicine,
Executive Officer*

Alvin Knudson, B.S., M.D., *Associate in Physical Medicine*

Jasper Wayne McFarland, B.S., M.D., *Clinical Instructor in Physical
Medicine*

Dorothy Emily Voss, Ed.B., R.P.T.T., *Assistant in Physical Medicine*

Marjorie Ionta, B.S., *Assistant in Physical Medicine*

150 *Elements of Physical Medicine*

The Staff

In arrangement with the Anatomy Department, lectures and demonstrations of the various tests and measurements are employed in the evaluation of physical disability. Emphasis is placed on normal and abnormal peripheral nerve testing (electrodiagnosis), muscle testing, joint range, and other physical disability measurements.

351-52 *Advanced Physical Medicine*

The Staff

Lectures and demonstrations concerning the various techniques, clinical applications of physical medicine, and rehabilitation to be integrated with the teaching of the associated medical and surgical specialties.

467-68 *Clinical Studies*

The Staff

Clinical teaching and demonstration at the University Hospital.

485 *Research*

The Staff

Hours to be arranged.

PHYSICS

Thomas Benjamin Brown, Ph.D., *Professor of Physics, Executive Officer*

Walter Lynn Cheney, Ph.D., *Professor of Physics*

George Antony Gamow, Physics D., *Professor of Theoretical Physics*

David Bulkley Langmuir, Ph.D., *Professorial Lecturer in Physics*

George Martin Koehl, A.M., *Associate Professor of Physics*

Robert Randal Meijer, Ph.D., *Associate Professor of Physics*

—, *Assistant Professor of Physics*

Arthur Castner Christman, Jr., M.S., *Instructor in Physics*

Jean McQuiston Coover, A.M., in Ed., *Instructor in Physics*

William Franklin Heckert, B.S., *Instructor in Physics*

Charles Ravitsky, M.S. in Ed., *Associate in Physics*

Albert Prentice Kenyon, A.M., *Associate in Physics*

Philip Krupen, A.M., *Associate in Physics*

John Newell Tevis, A.M., *Associate in Physics*

DeWitt Fisher, A.M., *Associate in Physics*

Walter Louis Asling, A.M., *Associate in Physics*

The major in Physics (Departmental).—Prerequisite: Physics 6, 7, 8, and 55; Chemistry 21; Mathematics 19 and 20. Required for the Bachelor of Arts degree: Physics 101, 102, 105, 106, 113-14, and 155 or 156; Mathematics 132. Required for Bachelor of Science degree: same as for the Bachelor of Arts degree, plus Mathematics 171.

FIRST GROUP

5 *General Physics* (3)

Koehl and Staff

Introduction to the scientific method as used in the study of energy and forces; physical properties of solids, liquids, and gases; phenomena of heat and light. Prerequisite: high school algebra and plane geometry. Material fee, \$6. Lecture (1 hour); recitation (1 hour); laboratory (2½ hours). Morning, afternoon, and evening sections. (Also offered 1950 summer term.)

Physics 5x—same as Physics 5, but offered winter term. Lecture (1 hour)—morning and evening sections; recitation (1 hour)—morning, afternoon, and evening sections; laboratory (2½ hours)—morning, afternoon, and evening sections.

6 *General Physics* (3)

Cheney and Staff

Mechanics, wave-motion, sound, and optical instruments. Offered winter term. Prerequisite: Physics 5*; high school algebra and plane geometry. Material fee, \$6. Lecture (1 hour); recitation (1 hour); laboratory (2½ hours). Morning, afternoon, and evening sections. (Also offered 1950 summer term.)

* This prerequisite may be waived for students who have credit for a high school physics course which included individual laboratory work, providing they pass the qualifying examination given at the dates specified in the University calendar

7 General Physics (3)

Meijer and Staff

Elementary electricity and magnetism. Offered fall term. Prerequisite: Physics 5*; high school algebra and plane geometry. Material fee, \$6. Lecture (1 hour); recitation (1 hour); laboratory (2½ hours). Morning, afternoon, and evening sections. (Also offered 1950 summer term.)

8 General Physics (3)

Meijer and Staff

Foundations of Modern Physics.—The experimental evidence concerning light waves and quanta, X-rays, and radiowaves; electrons, protons, and other elementary particles; atomic and molecular structure; and nuclear physics. Prerequisite: Physics 6 and 7. Morning and evening sections. (Also offered 1950 summer term.)

55 Physical Measurements (2)

Cheney and Staff

Theory and use of the methods of precise measurement in the several fields of physics. Prerequisite: Physics 6 and 7. Prerequisite or concurrent registration: Mathematics 19. Material fee, \$6. Lecture (1 hour)—afternoon and evening sections; laboratory (2½ hours)—morning, afternoon, and evening sections. (Also offered 1950 summer term.)

SECOND GROUP**101 Mechanics (3)**

Koehl

Statics, elasticity, dynamics of solids and fluids, and gravitation. Prerequisite: Physics 6; Mathematics 20. Morning.

102 Heat and Thermodynamics (3)

Cheney

Thermometry, calorimetry, heat conduction, the laws of thermodynamics with application to physical systems. Prerequisite: Physics 8; Mathematics 20. Morning.

105 Principles of Electricity (3)

Cheney

Fundamental phenomena of electricity and magnetism; circuit theory, including elementary alternating-current circuits, terrestrial magnetism; atmospheric electricity. Prerequisite: Physics 8; Mathematics 20. Evening.

106 Optics (3)

Koehl

Geometrical optics; elementary theory of wave motions; interference, diffraction, polarization, and dispersion of light; laws of black-body radiation. Prerequisite: Physics 8; Mathematics 20. Evening. (Also offered 1950 summer term.)

113-14 Atomic and Molecular Physics (3-3)

Meijer

Constituent particles of matter, properties of the electron, photoelectric effect, X-rays, elements of the quantum theory, spectra and structure of atoms and molecules, and introduction to statistical physics. Prerequisite: Physics 8; Mathematics 20. Morning and evening sections.

* This prerequisite may be waived for students who have credit for a high school physics course which included individual laboratory work, providing they pass the qualifying examination given at the dates specified in the University calendar.

- 123 *Nuclear Physics* (3) Gamow
Radioactivity, nuclear transformations, new particles; astrophysical applications. Prerequisite: Physics 113-14. Evening.
- 124 *Modern Cosmology* (3) Gamow
Structure of stars; nuclear energy sources of stars; stellar evolution and explosions; Einstein theory of gravitation; relativistic cosmology; expanding universe; origin of galaxies, stars, and planets. Prerequisite: Physics 123; Mathematics 132. Evening.
- 128 *Sound* (3) Cheney
Production, propagation, and detection of sound waves; vibrations of sounding bodies; acoustic instruments and acoustic measurements. Prerequisite: Physics 8; Mathematics 20. Evening.
- 132 *Electronics* (3) Brown and Staff
The phenomena of electron emission from solids; the physical properties of electron tubes, and the principles underlying their basic applications. Prerequisite: Physics 8 and 55, and Physics 105 or Electrical Engineering 10. Material fee, \$6. Lecture (2 hours), laboratory (2 hours)—afternoon and evening sections.
- 133 *Electronic Circuits* (3) Brown
A continuation of Physics 132. Includes basic radiofrequency applications of electron tubes, and special types of tubes such as klystrons, resonators, and magnetrons. Lectures and problems. Prerequisite: Physics 132; Electrical Engineering 107. Evening.
- 155-56 *Advanced Physical Measurements* (3-3) Meijer
Optional programs of experiments in electricity and magnetism, optics, or atomic physics. Corresponding prerequisites are Physics 105, 106, or 113. In addition, Physics 55 is a general prerequisite. Material fee, \$6. Afternoon and Saturday sections.
- 191 *Principles of Nuclear Piles* (3) Beckerley
Review of nuclear physics, neutron reactions, fission process, slowing down and diffusion of neutrons, basic pile theory, engineering problems associated with chain-reacting piles. Prerequisite: Physics 8; Mathematics 20.
Summer term 1950.

THIRD GROUP

- 211-12 *Classical Physical Theory* (3-3) Langmuir
Fall term: dynamics of systems of particles and of rigid bodies; generalized coordinates. Winter term: dynamics of elastic bodies and fluids; electromagnetic field theory. Prerequisite: Physics 101, 102, and 105; Mathematics 132 and 171. Evening.
- 213-14 *Electromagnetic Radiation* (3-3) Brown
Electromagnetic theory as applied to light and radio waves, with especial consideration given to "micro-waves". Prerequisite: Physics 105 and Mathematics 132, or the equivalent. 1951-52 and alternate years.

- 215 *Physics of the Solid State* (3) Meijer
Theory and experimental techniques connected with the principal properties of the various solid types. Topics to be discussed include the structure of solids, their thermal and mechanical properties, the electronic behavior of metals, semiconductors, etc., and the magnetic and optical properties of solids. Prerequisite: Physics 113-14. Evening.
- 221-22 *Quantum Mechanics* (3-3) Gamow
Formulation and application of laws holding within the atom, the relation of these laws to those of classical physics. Prerequisite: Physics 113-14 and 211-12. Evening.
- 235 *Electron Dynamics* (2) Langmuir
Emission of electrons; behavior of electrons in free spaces; behavior in axial fields, as in electron-optics, effects of time variable. Prerequisite: Physics 132; Mathematics 132. (Not offered in 1950-51.)
- 255-56 *Advanced Laboratory* (3-3) Brown
Special topics. One term of this course is required of all Master's candidates in physics. Not open to undergraduates. Material fee, \$6 a term. Afternoon and Saturday sections.
- 291-92 *Seminar: Recent Developments in Physics* (1-1) Cheney and Staff
Individual investigations of special problems. All students registered for a Master's degree in physics are expected to attend this seminar during residence for the degree, and to take part in its programs. Credit for participation in the seminar work may be obtained by registering for this course during the last two terms of residence; this credit, however, is based upon the seminar work during the entire period of residence. Alternate weeks, evening.
- 299-300 *Thesis* (3-3) The Staff

PHYSIOLOGY

Errett Cyril Albritton, A.B., M.D., *Fry Professor of Physiology, Executive Officer*

Chester Elwood Leese, Ph.D., *Professor of Physiology*

Joseph William Still, M.D., M.P.H., *Instructor in Physiology*

Katherine Virginia Greene, A.M., *Instructor in Physiology*

- 115 *Physiology* (3) Leese and Staff
Lectures for academic students covering the fundamentals of physiology in its various subdivisions. Prerequisites: one year of general science or one term of a biological science. Section A: Tues., Thurs., and Sat., 9:10 A.M.; section B: Tues. and Thurs., 5:10 to 6:25 P.M.
- 117 *Experimental Physiology* (1) The Staff
Laboratory exercises in the fundamentals of physiology, for academic students. Prerequisite or concurrent registration: Physiology 115 or the equivalent. Material fee, \$12. Sat., 10:10 A.M. to 1:00 P.M.
- 120 *Physiology of Endocrine Activity* (2) Albritton
The circulatory, metabolic, reproductive, growth, and other adaptations, immediate and long term, accompanying and affecting endocrine activity. May be taken for two credits with additional work. Prerequisite: Physiology 115 or the equivalent. Tues. and Thurs., 5:10 P.M.
- 130 *The Psycho-physiology of Personality* (2) Leese
Lectures on the genesis and expression of personality, with emphasis on the physiological approach. Prerequisite: Physiology 115 or the equivalent and general psychology. Tues. and Thurs., 6:10 P.M.
- 150 *Advanced Physiology* The Staff
One hundred physiological lectures and one hundred thirty laboratory hours devoted to the major divisions of the subject. For Medical Students.
- 159-60 *Experimental Method* (1-1) Albritton
Design of controlled experiments in medical or biological investigation; errors in design; criticism and judgment of evidence; and tests of the statistical significance of experimental results. Sat., 12:00 to 1:00 P.M.
- 169-70 *Problems in Physiology* Albritton and Staff
Hours and credits to be arranged.
- 179-80 *Physiology Seminar* (1-1) The Staff
Weekly throughout the year.

- 231 *Advanced Physiology of Circulation and Respiration* (2) Albritton and Staff
Lectures on blood, heart, circulation, respiration, and acid-base balance. Two hours a week, to be arranged.
- 234 *Advanced Physiology of Nutrition, Metabolism, and Excretion* (2) Steinman and Staff
Lectures on nutrition, digestion, metabolism, excretion, temperature regulation, and water balance. Two hours a week, to be arranged.
- 236 *Advanced Physiology of the Endocrine Glands and Reproduction* (1) Albritton and Staff
Lectures on ductless glands, hormones, humoral agents, and reproduction. One hour a week, to be arranged.
- 238 *Advanced Physiology of the Neuro-Muscular System* (2) Leese and Staff
Lectures on sensory reception, central nervous processes, somatic and visceral motor activity, and the behavior of smooth and striped muscle. Two hours a week, to be arranged.
- 240 *Advanced Experimental Physiology* (3) The Staff
Laboratory work only. Correlated with the lectures in courses 231-238. Material fee, \$25. Nine hours a week, to be arranged.
- 295-96 *Research* Albritton, Leese, and Staff
Hours and credits to be arranged.
- 299-300 *Thesis* (3-3) Albritton, Leese

POLITICAL SCIENCE

Warren Reed West, Ph.D., *Professor of Political Science*
 John Albert Tillema, Ph.D., LL.M., S.J.D., *Professor of Political Science*
 John Withrow Brewer, Ph.D., *Professor of International Law, Executive Officer*
 William Crane Johnstone, Jr., Ph.D., *Professorial Lecturer in Political Science*
 Karl Ernest Stromsem, Ph.D., *Professorial Lecturer on Public Administration*
 Wolfgang Herbert Kraus, Dr. Jur., S.J.D., *Associate Professor of Political Science*
 Allen Dailey Manvel, A.B., *Lecturer on Public Administration*
 Fred Latimer Hadsel, Ph.D., *Lecturer in Political Science*
 William George Torpey, Ph.D., *Lecturer on Public Administration*
 Floyd Millard Riddick, Ph.D., *Lecturer in Political Science*
 Thomas Ewing Cotner, Ph.D., *Lecturer in Political Science*
 Roy Malcolm Melbourne, A.M., *Lecturer in Political Science*
 Harvey Porter Hall, A.M., *Lecturer in Political Science*
 Charles Bigelow Stauffacher, A.M., *Lecturer on Public Administration*
 Jonathan Dayton Stoddart, A.M., *Instructor in Political Science*
 John Leiper Freeman, Jr., A.M., *Instructor in Political Science*

Minimum requirements for the major in Political Science (Departmental).—
 Prerequisite: Political Science 9-10. Required: Political Science 117-18 and twenty-four credit hours from the following groups distributed as follows: six hours from Group A; six hours from Group B; six hours from Group A, B, or C; six hours from Group A, B, C, or D.

Group A: Political Science 111, 112, 121-22. Group B: Political Science 171, 172, 181-82. Group C: Political Science 115, 116, 124, 141, 151-52, 161-62, 175-76, 191, 194. Group D: Political Science 127, 128, 129, 130.

Students interested in preparing for graduate work in Public Administration will consult the Executive Officer of the Department for modifications of the above requirements.

FIRST GROUP

9-10 *Government of the United States** (3-3) The Staff
 Morning and evening sections. (Also offered 1950 summer term.)
 Political Science 9x—same as Political Science 9, but offered winter term. Morning.
 Political Science 10x—same as Political Science 10, but offered fall term. Morning.

* Political Science 9-10 is prerequisite to all second-group courses.

SECOND GROUP *

- 111 *The Governments of Europe: England, France, and Switzerland* (3) Kraus
Morning.
- 112 *The Governments of Europe: Soviet Union, Germany, and Italy* (3) Kraus
Morning. (Also offered 1950 summer term.)
- 115 *Local Government* (3) Freeman
Morning.
- 116 *Political Parties* (3) Freeman
Morning.
- 117-18 *Political Theory* (3-3) Kraus
Evening. (Also offered 1950 summer term—Political Science 118 (3).)
- 121-22 *The Constitution of the United States* (3-3) West
Morning.
- 124x *Legislative Organization* (3) Riddick
Morning.
- 127 *Commercial Law: Contracts, Agency, and Bailments* (3) Tillema
Morning and evening sections. (Also offered 1950 summer term.)
- 128 *Commercial Law: Negotiable Instruments, Property, Sales, Mortgages* (3) Tillema
Morning and evening sections. (Also offered 1950 summer term.)
- 129 *Law in Relation to the Form of Business Units* (3) Tillema
Morning. (Also offered 1950 summer term.)
Political Science 129x—same as Political Science 129, but offered winter term. Evening.
- 130 *Maritime Law* (3) Tillema
Morning.
- 141x *The Development of Legal Institutions* (3) Brewer
Evening.
- 151-52 *Public Administration* (3-3) Freeman
Evening. (Also offered 1950 summer term—Political Science 151 (3).)
- 161-62 *Administrative Law* (3-3) Tillema
Morning.
- 171 *International Politics* (3) Stoddart
Morning and evening sections. (Also offered 1950 summer term.)

* Political Science 9-10 is prerequisite to all second-group courses.

- 172 *International Organization: the United Nations* (3) Stoddart
Morning and evening sections. (Also offered 1950 summer term.)
- 175 *International Politics in the Western Hemisphere* (3) Stoddart
Morning.
- 176 *Current Trends in Latin American Politics and Government* (3) Stoddart
Morning.
- 181-82 *International Law* (3-3) Brewer
Morning and evening sections. (Also offered 1950 summer term.)
- 191 *Government and Politics in the Middle East* (3) Hall
Evening.
- 194 *Far Eastern Politics: Contemporary International Relations in the Pacific Area* (3) Melbourne
Evening.
- 199-200 *Proseminar: Readings for International Relations Major* (3-3) Stoddart
Open only to Columbian College majors in this field. Time to be arranged.

THIRD GROUP

- 209-10 *Seminar: the Legislative Process* (3-3) West
Evening.
- 212 *Seminar: Comparative Government* (3) Kraus
Afternoon.
- 213 *Reading Course in Comparative Government* (3) Kraus
Time to be arranged. (Also offered 1950 summer term.)
- 217 *Seminar: Political Theory* (3) Kraus
Afternoon.
- 220 *Reading Course in Political Theory* (3) Kraus
Time to be arranged.
- 226 *Problems of Governmental Reorganization* (3) Torpey
Summer term 1950.
- *239 *Seminar: Personnel Administration* (3) Torpey
Evening. (Also offered 1950 summer term.)

* Primarily for majors in the School of Government.

- *240 *Seminar: Problems in Personnel Management* (3) Torpey
Evening.
- *252 *Budgetary and Financial Administration* (3) Manvel
Evening.
- *253 *Staff Functions in Government Administration* (3) Manvel
Evening.
- *255 *Seminar: Principles and Problems of Administration* (3) Stauffacher
Evening.
- *260 *Seminar: Administration of Major Governmental Programs* (3) Stauffacher
Evening.
- *261-62 *Reading and Conference Course in Public Administration* (3-3) Torpey
Evening.
- *263-64 *Analysis of Administrative Procedures* (3-3) Stromsem and Staff
Open only to members of the Internship Program in the School of Government. Time to be arranged.
- 271-72 *Problems in International Politics and Organization* (3-3) Hadsel
Evening. (Also offered 1950 summer term—Political Science 272 (3).)
- *273 *Seminar: International Administration* (3) Hadsel
Evening.
- *274 *Seminar: Objectives and Methods of Foreign Policy* (3) Schoenfeld
Evening.
- 277-78 *Seminar: Latin American Politics and Government* (3-3) Cotner
Evening.
- *279 *Reading Course in International Affairs* (3) Hadsel
Time to be arranged.
Political Science 279x—same as Political Science 279, but offered winter term.
- 281-82 *Seminar: International Law and Relations* (3-3) Brewer
Afternoon. (Also offered 1950 summer term—Political Science 281 (3).)

* Primarily for majors in the School of Government.

293-94 *Seminar: International Politics and Government in the Pacific Area* (3-3) Johnstone

(Political Science 294—Evening. Political Science 293 not offered in 1950-51.)

295 *Reading Course in Far Eastern Politics and Governments* (3) Johnstone
Evening.

299-300 *Thesis* (3-3)

The Staff

PSYCHIATRY

- Winfred Overholser, A.B., M.D., Sc.D., *Professor of Psychiatry, Executive Officer*
 Roscoe Willis Hall, Ph.B., M.D., *Clinical Professor of Psychiatry*
 Solomon Katzenelbogen, M.D., *Clinical Professor of Psychiatry*
 Addison McGuire Duval, M.D., *Clinical Professor of Psychiatry*
 Sidney Berman, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
 Morris Kleinerman, Ch.D., M.B., *Assistant Clinical Professor of Psychiatry*
 Henry Prather Laughlin, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
 Marshall deGraffenried Ruffin, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
 Leon Yochelson, A.B., M.D., *Assistant Clinical Professor of Psychiatry*
 Harriet Elizabeth Twombly, A.B., M.D., *Associate in Psychiatry*
 Samuel Alexander Silk, Ph.D., M.D., *Associate in Psychiatry*
 Isabelle Virginia Kendig, Ph.D., *Associate in Psychiatry*
 Norman Taub, B.S., M.D., *Associate in Psychiatry*
 William Green Cushard, M.D., *Associate in Psychiatry*

- 165 *Dynamics of Personality Development* Berman
 An orientation course in the anatomical, physiological, and psychological growth and development of personality. Consideration of characteristics of structure, function, and development of the psyche leading to normal behavior as a basis for the study of the pathological. Evaluation of interpersonal relationships. One hour a week.
- 178 *Psychopathology* Hall
 Manifestations and understanding of various mental mechanisms and abnormal reaction-types, preceded by history of development of psychopathology and illustrated with case material. One hour a week.
- 266 *Psychiatry* Overholser
 History, etiology, symptoms, course, and treatment of the major psychoses with emphasis on the dynamics involving the person as a whole. One hour a week.
- 268 *Demonstration Clinics* Silk, Twombly
 Presentation of clinical cases of major mental illnesses and primary behavior disturbances, correlating with Psychiatry 266. Each student examines patients under supervision. Three hours a week. St. Elizabeths Hospital.
- 271 *Psychosomatic Aspects of General Medicine* Katzenelbogen
 Somatic disorders of psychogenic origin. The role of personality reactions in functional and organic disorders. One hour a week.

- 324 Psychoneurosis** Laughlin
Etiology, psychopathology, clinical aspects, and treatment of various types of psychoneuroses. One hour a week for twelve weeks. Medical Conference Room, Gallinger Hospital.
- 326 Psychological Techniques in Psychiatric Practice** Kendig
Discussion of psychological concepts and tools available for determination of intellectual level, personality structure, functional impairment, and organic deterioration. One hour a week for four weeks. Medical Conference Room, Gallinger Hospital.
- 331-32 Clinical Clerkship** Cushard, Taub
Under supervision, each student conducts mental and physical examinations of patients, works up and presents his cases for discussion and conclusion. Two-week assignments by section. Gallinger Hospital.
- 431-32 Clinical Clerkship** Duval, Kleinerman, Laughlin, Ruffin, Yochelson, Pallister
Supervised examination, diagnosis, and treatment of ambulatory borderline cases. Conferences for discussion of cases. Clinical application of psychiatric principles to general medical practice is stressed. Three hours twice a week, in rotation. University Hospital Out-patient Psychiatric Clinic.

PSYCHOLOGY

Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
 Thelma Hunt, Ph.D., M.D., *Professor of Psychology, Executive Officer*
 *Henry Furness Hubbard, Ph.D., *Adjunct Professor of Psychology*
 Clarence Daniel Leatherman, Ph.D., *Professorial Lecturer in Psychology*
 Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 Willard Edmund Caldwell, Ph.D., *Assistant Professor of Psychology*
 James Norman Mosél, A.M., *Assistant Professor of Psychology*
 Ewing Lakin Phillips, Ph.D., *Assistant Professor of Psychology*
 Bernard Hayman Fox, Ph.D., *Assistant Professor of Psychology*
 Margaret Ives, Ph.D., *Lecturer in Psychology*
 Isabelle Virginia Kendig, Ph.D., *Lecturer in Psychology*
 Edwin Wallace Davis, Ph.D., *Lecturer in Psychology*
 Clyde Lindley, A.M., *Lecturer in Psychology*
 Don Carlos Faith, A.M., *Associate in Psychology*
 Roland Henry Tanck, A.M., *Associate in Psychology*

Minimum requirements for the major in Psychology (Departmental).—Prerequisite: Psychology 1, and 2 or 22. Required: twenty-four credit hours in psychology above 2 or 22, including Psychology 29 or 151, 98, 131, 191, and 196; Statistics 53; and Physiology 115 or Psychology 117.

For requirements for graduate degrees, consult the Executive Officer.

FIRST GROUP

1 *General Psychology*† (3) The Staff

The fundamental principles underlying human behavior. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)

Psychology 1x—same as Psychology 1, but offered winter term. Morning and evening sections.

2 *Applied Psychology* (3) Caldwell, Mosél

The applications of psychology in business, industry, medicine, law, guidance, education, and social problems. Morning and evening sections. (Also offered 1950 summer term.)

Psychology 2x—same as Psychology 2, but offered fall term. Morning and evening sections.

22 *Introduction to Educational Psychology* (3) Faith

Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training. Morning. (Also offered 1950 summer term.)

Psychology 22x—same as Psychology 22, but offered fall term. Evening.

* On leave of absence 1950-51.

† Psychology 1 is prerequisite to all other courses in Psychology.

- 29 *Child Psychology* (3) Phillips
A genetic approach to the study of the child. Special emphasis is placed on the socialization process, learning, and the child's view of the world. Evening. (Also offered 1950 summer term.)
Psychology 29x—same as Psychology 29, but offered winter term. Morning.
- 98 *Abnormal Psychology* (3) Hunt, Phillips
The causes, diagnosis, treatment, and prevention of the various types of maladjustments and mental disorders. Prerequisite: 6 credits in psychology, or 3 credits in psychology and 6 credits in a biological science. Morning. (Also offered 1950 summer term.)
Psychology 98x—same as Psychology 98, but offered fall term. Morning and evening sections.

SECOND GROUP *

- 117 *Physiological Psychology* (3) Fox
Structure, function, and phylogeny of receptors, nervous system, and effectors as mediators of behavior, including drives, learning, and emotions.
Summer term 1950.
- 121 *Educational Psychology* (3) Faith
Advanced course in educational psychology. Open each term on the individual study plan to a limited number of students. Time to be arranged.
- 129 *Introduction to Counseling and Guidance* (3) Dreese
A survey of the basic principles, techniques, and procedures as applied to vocational, educational, and personal counseling. Evening.
- 131 *Psychological Tests* (3) Hunt
A survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$2.25. Morning. (Also offered 1950 summer term.)
Psychology 131x—same as Psychology 131, but offered winter term. Evening.
- 144 *Personnel Psychology* (3) Mosé
The applications of psychology to personnel work in education, business, industry, and government. Afternoon. (Also offered 1950 summer term.)
Psychology 144x—same as Psychology 144, but offered fall term. Evening.
- 151 *Social Psychology* (3) Tuthill
The social foundations of attitudes and behavior. Individual adjustment to group situations, such as the family, school, fraternity, and occupation. The psychological bases of race prejudice, nationalism, and war. Morning. (Also offered 1950 summer term.)
Psychology 151x—same as Psychology 151, but offered winter term. Evening.

* Six credits in first group courses are prerequisite to all second group courses.

156 Psychology of Propaganda and Public Opinion (3)
Evening.

162x Comparative Psychology (3) Caldwell
A survey of psychological processes in infrahuman organisms, with special emphasis on the evolution of animal behavior from the lowest forms to man. Accompanied by laboratory work. Material fee, \$6. Afternoon.

171 Psychology of Personality (3) Caldwell
Contemporary approaches to the study of personality. Prerequisite: 12 credits in psychology, including Abnormal Psychology. Afternoon and evening sections.

191 Experimental Psychology (3) Tuthill
The application of experimental methods to various psychological problems. Prerequisite: 12 credits in psychology. Material fee, \$6. Afternoon.
Psychology 191x—same as Psychology 191, but offered winter term. Afternoon and evening sections.

192 Problems in Experimental Psychology (3) Tuthill
Opportunity for work on individual experimental projects. Prerequisite: Psychology 191. Open each term to a small number of students by permission of the instructor. Time to be arranged.

193-94 Readings in Psychology (3-3) The Staff
Supervised readings on specific topics in psychology; with conferences; for undergraduate majors. Open only to seniors with 18 or more credits in psychology with a quality point index of 3.00 or higher. Special permission of staff member under whom course is to be taken is necessary. Time to be arranged. (Also offered 1950 summer term.)

196 History and Systems of Psychology (3) Caldwell
A survey of the contemporary schools of psychology. Prerequisite: 12 credits in psychology. Morning and evening sections. (Also offered 1950 summer term.)

THIRD GROUP *

201x Seminar: Advanced General Psychology (3) Fox
General review of the field for graduate students with an intensive study of selected problems. Required in all graduate programs. Afternoon and evening sections.

202 Psychological Research Methods and Procedures (3) Fox
Required of all Master of Arts candidates in psychology. Prerequisite:

* Open only to graduate students with 18 or more credits in psychology, except by special permission of Instructor and Executive Officer of the Department.

sites: Experimental Psychology and Statistics. Afternoon and evening sections.

Psychology 202x—same as Psychology 202, but offered fall term. Evening.

- 205-6 *Field Work in Psychology* (3-3) The Staff
Supervised field work in agencies providing psychological service. Admission by permission of the Executive Officer of the Department. Time to be arranged. (Also offered 1950 summer term.)

- 207-8 *Readings in Psychology for Graduate Students* (3-3) The Staff
Supervised readings with conferences on specified topics in psychology. Time to be arranged. (Also offered 1950 summer term.)

- 209x *Seminar: Psychology of Motivation* (3) Fox
A consideration of various theoretical approaches to the psychology of motivation and systematic concepts and experimental findings deriving from each approach. Afternoon.

- 212 *Seminar: Personality Evaluation by Projective Techniques* (3) Kendig
Evening.

- 213 *Seminar: Clinical Psychology* (3) Ives
An intensive study of some problem in the field of clinical psychology. Evening.

- 220 *Seminar: Abnormal Psychology* (3) Hunt
An intensive study of a selected problem in the field of abnormal psychology. Afternoon.

- 223 *Seminar: Learning* (3) Fox
Covers theories of learning. Evening. (Also offered 1950 summer term.)

- 225 *Seminar: Mental Hygiene* (3) Phillips
A survey of the recent literature in social psychology and anthropology as they relate to the impact of society on the mental hygiene of the individual. Individual mental health problems are viewed in terms of the social context in which they occur and are treated. Saturday morning. (Also offered 1950 summer term.)

- 226 *Seminar: Clinical Psychology of Childhood* (3) Phillips
A survey of children's behavior and personality disorders. Special emphasis is placed on therapy and the techniques of interviewing and testing children. Saturday morning.

- 227 *Seminar: Counseling and Guidance* (3) Dreese
Recent developments and current problems in vocational, educational, and personal guidance in various types of agencies with particular reference to education. Prerequisite: educational or psychological measurements. Evening. (Also offered 1950 summer term.)

- 228 *Seminar: Techniques of Counseling* (3) Dreese
Specific types of vocational, educational, and personal counseling problems approached through the case method. Prerequisite: recent previous course in counseling and guidance and familiarity with individual analysis methods. Evening. (Also offered 1950 summer term.)
- 229 *Seminar: Occupational and Educational Information* (3) Davis
Designed to acquaint vocational and educational counselors with the basic occupational and educational information necessary in counseling. Sources of data and techniques of collecting, analyzing, and disseminating for purposes of guidance. Evening.
- 231 *Test Construction* (3) Hunt
The principles underlying test construction; statistical techniques in the construction, evaluation, and standardization of psychological, educational, and vocational tests. Prerequisite: a course in tests and measurements and a course in statistics. Evening.
- 232 *Research: Test Construction* (3) Hunt
Individual projects in construction and evaluation of psychological, educational, or vocational tests. Prerequisite: Psychology 231, open each term on individual study plan to a small number of students by permission of instructor. Time to be arranged.
- 233 *Individual Psychological Testing* (3) Phillips
Instruction and practice in giving of the Binet test and the Wechsler-Bellevue Test. Emphasis is placed on testing children and adolescents. Prerequisite: an elementary course in tests and measurements. Material fee, \$2.25. Afternoon.
Psychology 233x—same as Psychology 233, but offered winter term. Afternoon.
- 234 *Seminar: Test Theory* (3) —————
Evening.
- 236 *Seminar: Analysis of the Individual for Purposes of Counseling* (3) Dreese
A detailed study of individual analysis techniques with practice in handling such methods. Prerequisite: an introductory course in educational or psychological measurements. Evening.
- 242x *Seminar: Psychological Principles of Personnel Management* (3) Leatherman
A study of the applications of psychology to various personnel procedures, for those interested in either government or industrial personnel work. Prerequisite: Psychology 144 or the equivalent. Evening.
- 244 *Seminar: Job Analysis and Evaluation* (3) Leatherman
Evening.

- 246x *Seminar: Personnel Measurement Techniques* Mosé
(3)
Detailed consideration of interviews, personal data analysis, tests, ratings and questionnaires in evaluating employability, job proficiency, and worker morale. Afternoon.
- 248 *Seminar: Psychological Market Research* (3) Mosé
Techniques and results in the analysis of consumer behavior. The measurement of advertising effects, consumer surveys, acceptance testing, product design, forecasting audience response to media. Evening. (Also offered 1950 summer term.)
- 251 *Seminar: Advanced Social Psychology* (3) Tuthill
Current research and theory in social psychology; group dynamics, ego-involvements, action research, and social interaction theory. Afternoon. (Also offered 1950 summer term.)
- 255x *Seminar: Techniques of Opinion and Attitude Measurement* (3) Tuthill
Methods of attitude measurement (interviews, questionnaires, scales, polls) as currently used by private and governmental investigators. The place of attitude studies in schools, industry, government, etc. Evening.
- 272x *Seminar: Theories of Personality* (3) Caldwell
A survey of the various theories of personality, with emphasis upon theoretical problems and methodology in the field of personality study. Evening. (Also offered 1950 summer term.)
- 295-96 *Research in Psychology* (arr.) The Staff
Individual research by student, carried out under supervision of staff member. Time and credits to be arranged. (Also offered 1950 summer term.)
- 299-300 *Thesis* (3-3) The Staff
Time to be arranged. (Also offered 1950 summer term.)

RADIOLOGY

William Woodrow Stanbro., M.D., *Professor of Radiology, Executive Officer*

Solomon Rodney Bersack, M.D., *Associate in Radiology*

Keene Manning Wallace, M.D., *Associate in Radiology*

George Tievsky, M.D., *Clinical Instructor in Radiology*

213 Basic Radiology

Orientation lectures in X-ray physics.

The Staff

341-42 Radiological Diagnosis

Lectures in conjunction with the course in Physical Diagnosis.

The Staff

358 Advanced Radiological Diagnosis

Lectures and discussions.

The Staff

449 Clinical Studies

Students assigned in rotation on a full-time basis for a specific period to the X-ray Department.

The Staff

478 Research

Hours to be arranged.

The Staff

RELIGION

Thomas Archie Stone, Ph.D., *Professorial Lecturer in Religion*

Lawrence Daniel Folkemer, Ph.D., *Associate Professor of Religion, Executive Officer*

John Walter Beardslee III, A.B., B.D., *Assistant Professor of Religion*

Minimum requirements for the major in Religion (Departmental).—Eighteen credit hours beyond first-group courses.

FIRST GROUP

9 *The Old Testament* (3)

Beardslee

A historical and literary approach to the study of the books of the Old Testament with special consideration given to the development of religious ideas, institutions, and outstanding personalities. Morning and evening sections.

10 *The New Testament* (3)

Beardslee

A study of the literature of the New Testament from the standpoint of occasion, purpose, dominant ideas, and permanent values. Special consideration given to life in the primitive Christian Church. Morning and evening sections. (Also offered 1950 summer term.)

59-60 *History of Religions* (3-3)

Folkemer, Beardslee

Fall term: primitive and eastern religions—Egyptian religion, Confucianism, Taoism, Buddhism and sects, Hinduism, and Shintoism—considering environment, personalities, religious thought, cultus, ethics, and modern trends. Winter term: Judaism, Christianity, and Islam; analysis of early development, thought, life, institutions, and expansion. Recent issues and trends examined. Morning and evening sections. (Also offered 1950 summer term—Religion 59 (3).)

SECOND GROUP

102 *The Prophets, Their Times and Their Message* (3)

Beardslee

The development of prophetism in the Old Testament; cultural, economic, psychological, and religious factors in the movement; elements of lasting value in the prophetic teaching. A few of the prophets will be selected for particular study. (Not offered in 1950-51.)

103 *The Life and Significance of Jesus* (3)

Beardslee

A detailed study of the life and teachings of Jesus on the basis of a comparative analysis of the Gospel records; the significance of the message of Jesus for our own times. Morning.

104 *The Life and Letters of Paul* (3)

Beardslee

Greek and Hebrew backgrounds of early Christianity, the Roman world of the first century, religious and social conditions affecting the spread of Christianity, the life and journeys of Paul, Paul's teaching and presentation of the Christian faith, the place of the Pauline epistles in the New Testament. Morning.

- 143 *Philosophy of Religion* (3) Folkemer
A constructive investigation of the evidences of religious knowledge and experience, the nature of God and man, the problem of evil, freedom of the will, eternal life, the destiny of human society. (Not offered in 1950-51.)
- 151 *History of the Christian Church to the Reformation* (3) Folkemer
A detailed study of the Christian Church from Apostolic days to the Reformation; relationship between church and state, doctrines, worship, expansion, rise of papacy, monastic movement, and pre-Reformation dissent. Morning.
- 152 *History of the Christian Church Since the Reformation* (3) Beardslee
The origin and development of Protestantism; the Roman Catholic revival; developments among the Eastern churches; doctrines, worship, expansion, church and state, and relation to modern thought and life in the Continent and Great Britain. Morning.
- 172 *Religion in American Life* (3) Folkemer
Growth of religious bodies and institutions in American culture; the heritage of religious freedom and diversity, religion and literature, revivalism and education, science and religious thought, divisions and cooperative movements in religion. Morning.
- 185 *Classics of Religious Literature* (3) Folkemer
A careful study of some of the world's treasures of religious literature from the standpoint of religious message, literary form, and permanent influence. Readings from *Bhagavadgita*; *The Bible*; *The Koran*; *City of God*, Augustine; *Imitation of Christ*, à Kempis; *Praise of Folly*, Erasmus; *Pilgrims Progress*, Bunyan; *Christian Liberty*, Luther, etc. Morning.
- 191-92 *Christian Education in the Church* (3-3) Stone
Fall term: principles of religious education; factors conditioning Christian growth; functions of family, church, community, and state. Winter term: the unified program of the church; worship, study, and service; developing lay educational leadership; housing and equipment; curriculum construction; evaluation of materials; lesson planning and teaching methods. Evening.

ROMANCE LANGUAGES AND LITERATURES

Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*

Merle Irving Protzman, Ph.D., *Professor of Romance Languages*

Louis Clark Keating, Ph.D., *Professor of Romance Languages, Executive Officer*

Alan Thomas Deibert, A.M., *Professor of Romance Languages*

Irene Cornwell, Ph.D., *Associate Professor of French*

Antonio Alonso, A.M., *Associate Professor of Spanish*

Carey DeWitt Eldridge, Ph.D., *Assistant Professor of Romance Languages*

Rafael Supervía, Doctor en Derecho, *Assistant Professor of Spanish*

Jacqueline Chevallaz Buhrman, A.M., *Assistant Professor of French*

James Willis Robb, A.B., *Assistant Professor of Romance Languages*

Alberto Vázquez, Ph.D., *Lecturer on Spanish American Literature*

*Felicia Mary Miller, A.M., *Instructor in Spanish*

Julia Elizabeth Hicks, A.M., *Instructor in Romance Languages*

José Silvado Bueno, A.M., *Associate in Portuguese*

Roberto Daniel Meléndez, A.B., *Associate in Spanish*

The majors.—The Department of Romance Languages offers three majors administered under the field-of-study plan, and provides proseminars intended to assist the student in preparing himself for the respective major examinations. These are: (1) a *Major in French Literature* (proseminar: French 199-200); (2) a *Major in Spanish Literature* (proseminar: Spanish 199-200); and (3) a *Major in Spanish American Literature* (proseminar: Spanish 197-98). The members of the staff in charge of the respective proseminars are designated as advisers in the respective fields. In these majors, emphasis will be laid upon the political, social, and cultural background of the literature studied, as well as upon writers and their works. A reasonable proficiency in the spoken language will be required. Majors in Romance Languages are strongly advised to study Latin, a knowledge of which is required for graduate work in most institutions. For further details, see the pamphlet on the subject or consult the Executive Officer of the Department or the appropriate adviser.

FRENCH

FIRST GROUP

†1-2 *First-year French* (3-3)

The Staff

For beginners. Grammar, composition, drill in pronunciation, translation of modern French prose. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)

French 1x—same as French 1, but offered winter term. Morning and evening sections.

French 2x—same as French 2, but offered fall term. Morning, afternoon, and evening sections.

* On leave of absence 1950-51.

- 1-2x *First-year French (accelerated)* (6) The Staff
Same as French 1-2, but full year given in fall term on an accelerated basis. Morning.

- †3-4 *Second-year French* (3-3) The Staff
Advanced grammar and composition, reading in modern French prose, oral practice, introduction to French civilization. Prerequisite: French 1-2 or two years of high school French. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)
French 3x—same as French 3, but offered winter term. Morning and evening sections.

French 4x—same as French 4, but offered fall term. Morning and evening sections.

- 3x-4 *Second-year French (accelerated)* (6) The Staff
Same as French 3-4 but full year given in the winter term on an accelerated basis. Morning.

- 51-52 *Survey of French Literature* (3-3) Deibert
Morning and evening sections.

SECOND GROUP

French 3-4 or the equivalent is prerequisite to all second-group courses in French. French 51-52 is prerequisite to all second-group courses except French 109-10.

- 109-10 *French Conversation and Composition* (3-3) The Staff
Morning, afternoon, and evening sections. (Also offered 1950 summer term.)

- 119-20 *French Literature of the Sixteenth Century* Keating
(3-3)

Prose, poetry, drama, and memoirs of the French Renaissance; Rabelais, Montaigne, Marot, La Pléiade, etc. Class analysis of texts, collateral reading. Recommended: History 120. 1951-52 and alternate years, evening.

- 121-22 *French Literature of the Seventeenth Century* Protzman
(3-3)

History, philosophy, criticism, memoirs, letters, eloquence, drama, fiction, poetry. Class analysis of texts; collateral reading. Morning.

- 123-24 *French Literature of the Eighteenth Century* Deibert
(3-3)

History, philosophy, criticism, letters, drama, fiction, poetry, the "salons", the idea of progress, the idea of science. Class analysis of texts, collateral reading, lectures on literature and history. 1951-52 and alternate years, morning.

- 125-26 *French Literature of the Nineteenth Century* Keating
(3-3)

Romanticism and realism; fiction, poetry, drama, criticism. Class analysis of texts, collateral reading, lectures on literature and history. 1950-51 and alternate years, evening.

- 127-28 *French Literature of the Twentieth Century* Cornwell
(3-3)
Fiction, poetry, drama, criticism. Class analysis of texts, collateral reading, lectures on literature and history. Morning.
- 135 *The Modern Novel in France* (3) Keating
An intensive study of the characteristic novels of the nineteenth and twentieth centuries. Lectures, collateral readings, class discussion.
Summer term 1950.
- 136 *The Modern Drama in France* (3) Protzman
Reading, analysis, and discussion of typical plays and dramatic trends of the nineteenth and twentieth centuries. Lectures, collateral readings, class discussion.
Summer term 1950.
- 199-200 *Proseminar: Readings for the Major in French Literature* (3-3) Protzman
Conferences and group discussions. Afternoon.

THIRD GROUP

- 227-28 *Seminar in Modern French Literature* (3-3) Keating
Prerequisite: a second-group course in French literature. 1950-51 and alternate years, afternoon.
- 229-30 *Seminar in Classical French Literature* (3-3) Protzman
Prerequisite: a second-group course in French literature. 1951-52 and alternate years, afternoon.
- †249-50 *Old French* (3-3) Doyle
Phonology and morphology of Old French, with an outline of its development through Vulgar Latin; survey of French literature to the end of the thirteenth century. Prerequisite: a second-group course in French literature; an elementary knowledge of Latin. (Not offered in 1950-51.)
- †251-52 *Middle French* (3-3) Doyle
French literature of the fourteenth and fifteenth centuries. Class analysis of texts; collateral reading. Prerequisite: a second-group course in French literature. Knowledge of Old French desirable. (Not offered in 1950-51.)
- 299-300 *Thesis* (3-3) The Staff

PORTUGUESE

FIRST GROUP

- †1-2 *First-year Portuguese* (3-3) Bueno
For beginners. Grammar, composition, drill in pronunciation, translation of modern Portuguese prose. Evening.

†3-4 *Second-year Portuguese* (3-3)

Bueno

Advanced grammar and composition, reading of modern Portuguese prose, oral practice, introduction to Portuguese and Brazilian civilization. Prerequisite: Portuguese 1-2 or the equivalent. Evening.

SECOND GROUP

127-28 *Portuguese and Brazilian Literature* (2-2)

Evolution of the Portuguese language; outline of the literature of Portugal (fall term) and Brazil (winter term). Lectures, readings, written reports. Conducted in Portuguese. Prerequisite: Portuguese 3-4 or the equivalent. (Not offered in 1950-51.)

SPANISH

FIRST GROUP

†1-2 *First-year Spanish* (3-3)

The Staff

For beginners. Grammar, composition, drill in pronunciation, translation of modern Spanish prose. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)

Spanish 1x—same as Spanish 1, but offered winter term. Morning and evening sections.

Spanish 2x—same as Spanish 2, but offered fall term. Morning, afternoon, and evening sections.

1-2x *First-year Spanish* (accelerated) (6)

The Staff

Same as Spanish 1-2, but full year given in fall term on an accelerated basis. Morning.

†3-4 *Second-year Spanish* (3-3)

The Staff

Advanced grammar and composition, reading of modern Spanish prose, oral practice, introduction to Latin American civilization. Prerequisite: Spanish 1-2 or two years of high school Spanish. Morning and evening sections. (Also offered 1950 summer term.)

Spanish 3x—same as Spanish 3, but offered winter term. Morning and evening sections.

Spanish 4x—same as Spanish 4, but offered fall term. Morning and evening sections.

3x-4 *Second-year Spanish* (accelerated) (6)

The Staff

Same as Spanish 3-4, but full year given in winter term on an accelerated basis. Morning.

51-52 *Survey of Spanish Literature* (3-3)

Robb

Morning and evening sections.

SECOND GROUP

Spanish 3-4 or the equivalent is prerequisite to all second-group courses in Spanish. Spanish 51-52 is prerequisite to all second-group courses except Spanish 109-10.

109-10 *Spanish Conversation and Composition* (3-3)

Alonso and Staff

Morning and evening sections. (Also offered 1950 summer term.)

- 111-12 *Commercial Spanish* (3-3) Meléndez
Conversation and composition; letterwriting. Acquisition of Spanish vocabulary in a practical commercial context. Evening.
- 121-22 *Spanish Literature of the Golden Age* (3-3) Doyle
Cervantes, Lope de Vega, Calderón; the classic drama, fiction, the ballad, lyric poetry. Class analysis of texts, collateral reading, lectures on literature and history. 1950-51 and alternate years, morning.
- †123-24 *Cervantes* (3-3) Doyle
Life and works of Cervantes. The Quixote, the Novelas Ejemplares, and other works. 1951-52 and alternate years, morning.
- 125-26 *Modern Spanish Literature* (3-3) Alonso
Prose and poetry of the eighteenth and nineteenth centuries. Class analysis of texts, collateral reading, lectures on literature and history. 1950-51, evening. 1951-52, morning.
- 127-28 *Contemporary Spanish Literature* (3-3) Supervía
Prose and poetry of the latter part of the nineteenth and of the twentieth centuries. Class analysis of texts, collateral reading, lectures on literature and history. 1950-51 and alternate years, morning. 1951-52 and alternate years, evening.
- 131-32 *History of Spanish Civilization* (3-3) Supervía
The social, artistic, and cultural background of Spanish civilization. Lectures, recitations, and informal discussion. Evening.
- 135 *The Modern Novel in Spain* (3) Supervía
An intensive study of contemporary novels, novelists, and their backgrounds. Lectures, collateral reading, class discussion.
Summer term 1950.
- 136 *The Modern Drama in Spain* (3) Alonso
A study of selected plays with an appreciation of their social and literary significance. Lectures, collateral reading, class discussion.
Summer term 1950.
- 153-54 *The Modernista Movement in Spanish America* (3-3) Vázquez
A study of the background, trends, and personalities of this movement. (Not offered in 1950-51.)
- 155-56 *Spanish American Literature to 1880* (3-3) Vázquez
The literature of Spanish America from the colonial period to the latter part of the nineteenth century. Lectures, collateral reading, reports, and class analysis of important works. Evening.
- 157-58 *Spanish American Literature Since 1880* (3-3) Vázquez
The literature of Spanish America from 1880 to the contemporary period. Lectures, collateral reading, reports, and class analysis of important works. 1951-52 and alternate years, evening.

- 197-98 *Proseminar: Readings for the Major in Spanish American Literature (3-3)* Vázquez
Conferences and group discussions. Time to be arranged.
- 199-200 *Proseminar: Readings for the Major in Spanish Literature (3-3)* Alonso
Conferences and group discussions. Time to be arranged.

THIRD GROUP

- 225-26 *Seminar in Spanish Literature (3-3)* Alonso
Prerequisite: a second-group course in Spanish literature. 1951-52 and alternate years. Time to be arranged.
- 227-28 *Seminar in Spanish American Literature (3-3)* Vázquez
Prerequisite: a second-group course in Spanish American literature. Evening.
- †249-50 *Old Spanish (3-3)* Doyle
Literature and philology: *Poema del Cid*, *Libro de Buen Amor*, *Conde Lucanor*, etc.; Menéndez Pidal's *Manual elemental de gramática histórica española* and Ford's *Old Spanish Readings*. Prerequisite: a second-group course in Spanish literature; an elementary knowledge of Latin. 1950-51. Time to be arranged.
- 299-300 *Thesis (3-3)* The Staff

SECRETARIAL STUDIES

Dorothy Helene Veon, Ed.D., *Assistant Professor of Secretarial Studies,*
Executive Officer

June Elizabeth Ayers, A.M., *Associate in Secretarial Studies*

Elizabeth Ann McMahon, A.B., *Associate in Secretarial Studies,*

Requirements for the degree of Associate in Arts in Secretarial Studies.—See
page 61.

FIRST GROUP

- 1 *Elementary Typewriting* (2)
Veon, McMahon

Fundamental techniques of typewriting, basic styles of business letters, introduction to tabulation, and preparation of general office forms. Laboratory fee, \$4.50. Afternoon and evening sections.
Secretarial Studies 1x—same as Secretarial Studies 1, but offered winter term. Evening.
- 2 *Intermediate Typewriting* (2)
Veon, McMahon

The business letter and its arrangement, advanced tabulation, manuscript typing, office forms, stencil cutting, and legal documents. Prerequisite: Secretarial Studies 1 or the equivalent; ability to type accurately at 30 words a minute. Laboratory fee, \$4.50. Afternoon and evening sections.
Secretarial Studies 2x—same as Secretarial Studies 2, but offered fall term. Evening.
- 11 *Elementary Shorthand and Transcription* (4)
Veon

A study of the principles of Gregg shorthand correlated with dictation and transcription. Minimum dictation speed of 60 words a minute attained. Laboratory fee, \$1.50. Morning and evening sections.
- 12 *Intermediate Shorthand and Transcription* (4)
Veon

Review of the principles of Gregg shorthand dictation and transcription on general and specialized business subjects. Minimum dictation speed of 80 words a minute attained. Prerequisite: Secretarial Studies 11 or the equivalent; ability to take dictation at 60 words a minute. Laboratory fee, \$1.50. Morning and evening sections.
- 15 *Advanced Shorthand, Typewriting, and Transcription* (3)
Ayers

Emphasis on speed and accuracy. Minimum speed of 100 words a minute attained in dictation. Prerequisite: Secretarial Studies 12 or the equivalent; ability to take dictation at 80 words a minute and to transcribe accurately; ability to type 50 words a minute. Laboratory fee, \$1.50. Evening.
- 16 *Secretarial Shorthand, Typewriting, and Transcription* (3)
Ayers

Dictation and transcription involving vocabularies used in specific businesses and professions, with special reference to Medicine and Law.

Minimum dictation speed of 120 words a minute attained. Prerequisite: Secretarial Studies 15 or the equivalent; ability to take dictation at 100 words a minute and to transcribe accurately; ability to type 55 words a minute. Laboratory fee, \$1.50. Evening.

51 *Business Correspondence and Reports* (3) Veon

The technique of communication forms with reference to business letters and reports. Survey and analysis of current business literature. Prerequisite: English 1 and 2. Evening.

54 *Secretarial Practice* (3) Veon

Training in secretarial duties and in the use of secretarial equipment and supplies. Actual office experience involving the taking of dictation and the transcribing of various materials; composing business letters, reports, and other forms; preparing bills, statements, financial forms, and statistical records; modern filing systems. Special adaptation made for medical and legal secretaries. Prerequisite: Secretarial Studies 15 and 51; Accounting 1; or the equivalent. Time to be arranged.

SOCIOLOGY

Harold Loran Geisert, Ph.D., *Professor of Sociology, Executive Officer*
 Carr Bartleson Lavell, A.M., *Assistant Professor of Sociology*
 Kennett William Yeager, Ph.D., *Assistant Professor of Sociology*
 Henry Davidson Sheldon, Ph.D., *Lecturer in Sociology*

The major in Sociology (Departmental).—Prerequisite: Sociology 1 and 2. Required: Sociology 172 and 181 and eighteen hours elective in second and third group courses in sociology or closely related fields or departments, if specifically approved in advance by the Department of Sociology.

For requirements for the Master's degree, consult the Executive Officer.

FIRST GROUP

1-2 *Introductory Sociology** (3-3) Lavell, Yeager

The origin and development of culture, man's social nature, types of groups and institutions, social processes, factors producing social problems, individual and social disorganization. Morning and evening sections. (Also offered 1950 summer term.)

Sociology 1x—same as Sociology 1, but offered winter term. Morning.

71-72 *The American Community* (3-3) Yeager

Fall term: types of rural communities, changing rural social institutions, social processes in rural life. Winter term: growth of cities, study of changing urban community, urban group life and personality, housing and other urban problems. Morning.

SECOND GROUP

123 *Fields of Social Work* (3) Yeager

The nature and scope of social work, development of social work programs, function of social case work, social group work, public welfare, community organization and social action. Morning.

124 *Social Legislation* (3) Yeager

The principles, theories, and techniques of social legislation, relief of poverty, child welfare, housing and city planning, public health and recreation, social insurance. Morning.

127 *Community Organization* (3) Geisert

The study of social interaction in American communities, factors making for disorganization, community leadership, methods of organizing social forces to meet community needs. Morning. (Also offered 1950 summer term.)

131 *Social Institutions* (3)

The origin and development of social institutions, basic needs producing institutional forms, structures and functions of principal institutions and their interrelationship. (Not offered in 1950-51.)

* Sociology 1 is prerequisite to all other courses in Sociology.

- 132 *Marriage* (3) Yeager
The reasons for marriage, marriage laws, mate selection, courtship, husband-wife relations, factors in marital adjustment, marriage prediction and counseling. Morning. (Also offered 1950 summer term.)
- 133 *The Family* (3) Yeager
A study of the primitive and modern family, changing functions and roles of the family and its members, factors promoting disorganization, family crises, family reorganization. Morning. (Also offered 1950 summer term.)
- 134 *Child Welfare* (3) Sheldon
The socialization of the child through the home and other social institutions; the changing status of childhood, dependent and handicapped children, child labor. Evening.
- 135-36 *Crime and Delinquency* (3) Geisert
The nature and distribution of crime, factors producing criminal behavior, police systems, the criminal and juvenile courts, the prison system, probation and parole. Afternoon.
- 141 *Population Problems* (3) Sheldon
The composition of population, theories of population growth, quantitative and qualitative differences in population groups, trends in population growth, population policies. Evening.
- 142 *Human Migration* (3) Geisert
Factors producing population movements, causes and consequences of international migrations, internal population redistribution, effects of selective migration. Morning.
- 151 *Industrial Sociology* (3) Yeager
Interrelationships of industry and community; sociological analysis of work situation, labor movement, industrial leadership, and morale; and of the aged, ethnic, and woman worker. Evening.
- 162 *Social Change* (3) Yeager
The effects of technological change on society, nature and theories of social change, factors promoting change; methods of analyzing the social effects of inventions. Evening.
- 164 *Social Control* (3)
Informal and formal phases of human control; analysis of methods of control used in modern society and the situations in which they occur, policies and techniques of control. (Not offered in 1950-51.)
- 172 *Contemporary Social Theory* (3) Geisert
A systematic study of the important schools of contemporary sociology, including recent European as well as American developments, and an evaluation of the scientific contribution of each school. Evening.
- 181 *Methods of Social Research* (3) Geisert
An analysis of social research techniques and the scientific method; the application of the case study, social survey, statistical, sociometric, and experimental methods to social data. Evening.

THIRD GROUP

- 221 *Seminar: Current Trends in Sociology* (3) Geisert
An analysis and evaluation of the contributions of specific American sociologists to the development and refinement of social concepts, methodological techniques, and social theory. Evening.
- 225 *Seminar: Social Relations* (3)
The elements of social relations, types of social identification, forms of collective behavior, the sociative and dissociative elements in social process, organization of social relations, institutions, groups, societies. (Not offered in 1950-51.)
- 226 *Seminar: Social Structure* (3) Geisert
General characteristics of social structure, the role of custom in determining forms of structure, analysis of status by types: age, sex, vocational, social classes and castes, personal and categoric relations. Evening.
- 295-96 *Research* The Staff
Time and credits to be arranged.
- 299-300 *Thesis* (3-3) The Staff

SPEECH

*Lubin Poe Leggette, A.M., *Associate Professor of Speech, Executive Officer*

George Francis Henigan, Jr., Ph.M., *Associate Professor of Speech, Acting Executive Officer*

*Calvin Weir Pettit, Ph.M., *Assistant Professor of Speech*

Edwin Lockwood Stevens, A.M., *Assistant Professor of Speech*

Edward Perkins Mangum, A.M., *Assistant Professor of Speech*

Norman Patterson Crawford, A.M., *Assistant Professor of Speech, Acting Director of Speech Clinic*

Walter Byron Emery, LL.B., Ph.D., *Lecturer in Speech*

Edith Shores Surrey, A.M., *Instructor in Speech*

Lee Sheward Bielski, A.M., *Instructor in Speech*

Henry Charles Krebs, A.B., *Instructor in Speech*

William Vorenberg, A.M., *Instructor in Speech*

Robert Burns Stevens, A.B., *Instructor in Speech*

Andrew Anthony Nilles, A.B., LL.B., *Associate in Speech*

The major (Departmental).—Prerequisite: Speech 1, 2, 11, 32. The student may select one of three areas of concentration: (1) *Public Speaking*, (2) *Theatre*, (3) *Speech Correction*. Required: twenty-four credit hours of second-group courses in area selected and twelve hours in other areas as approved by the adviser in the major area.

FIRST GROUP

A *Speech Clinic*

Crawford and Staff

Individual or group lessons, without academic credit, for such speech difficulties as lisping, cleft palate, articulatory problems, and stuttering. Fee: for individual lesson, \$5; for group lesson, \$3. (Also offered 1950 summer term.)

B *American Speech for Foreign Students*

The Staff

Individual or group instruction without academic credit, in the formation of the sounds of spoken English, with emphasis on rhythm and inflection. The International Phonetic Alphabet is used. Fee: for individual lesson, \$5; for group lesson, \$3. (Also offered 1950 summer term.)

I *Effective Speaking* (3)

The Staff

Preparation and delivery of extempore speeches; developing confidence and poise, body and voice control; selecting and organizing material. Recording fee, \$2. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)

Speech 1x—same as Speech 1, but offered winter term. Morning, afternoon, and evening sections.

* On leave of absence 1950-51.

- 2 *Speech Making* (3) The Staff
 Special emphasis is placed on organization of material and elementary principles of persuasion. This course is a continuation of Speech 1, which is prerequisite. Recording fee, \$2. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)
 Speech 2x—same as Speech 2, but offered fall term. Morning and evening sections.
- 11 *Training the Speaking Voice* (3) The Staff
 Developing ease, naturalness, and clarity in the speaking voice. Analysis of individual voices through recordings. Phonetic approach to the study of the sounds of English, the standards of speech. Class instruction in the problems of rate, volume, pitch, and quality. Recording fee, \$2. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)
 Speech 11x—same as Speech 11, but offered winter term. Morning and evening sections.
- 32 *Oral Reading* (3) The Staff
 Reading to others, theory and practice in the problems of interpreting the printed page. Prerequisite: Speech 11 or the permission of the instructor. Recording fee, \$2. Morning, afternoon, and evening sections. (Also offered 1950 summer term.)
 Speech 32x—same as Speech 32, but offered fall term. Morning, afternoon, and evening sections.
- 41 *Parliamentary Law* (3) Emery
 The correct procedure in forming an organization and in conducting its meetings in an orderly and businesslike manner. Saturday morning.

SECOND GROUP

- 101 *Introduction to Phonetics* (3) Bielski
 The fundamental and critical analysis of the sound system of the English language. Attention to comparative phonetics and standards of pronunciation. Recording fee, \$2. Afternoon. (Also offered 1950 summer term.)
- 102 *Oral Interpretation of Literature* (3) Vorenberg
 Theory and practice in the problems of communicating meaning and emotion. Selections for study include poetry and prose. Prerequisite: Speech 32 or permission of the instructor. Recording fee, \$2. Afternoon.
- 109 *Radio Speaking and Production* (3) E. Stevens
 Radio speeches, interviews, and discussions; news reporting and interpreting; techniques of direction and production; plays; audience measurement. Prerequisite: Speech 32 or permission of the instructor. Recording fee, \$3.50. Afternoon.
- 131 *Group Discussion and Conference Leadership* (3) Henigan
 The process of thinking and problem solving in committees and small groups, and the methods of leading discussions and conferences. Prerequisite: six credit hours of speech or the permission of the instructor. Afternoon.

- 136 *Public Discussion and Debate* (3) Henigan
Principles and types of public discussion and debate; practice in argumentative speaking on questions of current interest. Prerequisite: six credit hours in speech or the permission of the instructor. Afternoon.
- 143 *Persuasion* (3) Henigan
An advanced course in public speaking with emphasis on audience analysis and audience psychology; preparation and delivery of persuasive speeches; study of current public speeches. Prerequisite: nine credit hours of speech. Morning.
- 145-46 *History and Criticism of Public Address* (3-3) E. Stevens
A critical and historical survey of rhetorical theory and public address from Ancient Greece to the present. Prerequisite: nine credit hours of speech. Morning.
- 148 *Speeches for Special Occasions* (3) E. Stevens
The preparation and presentation of speeches of introduction, presentation, acceptance, welcome, nomination, and eulogy. Prerequisite: nine credit hours of speech. Morning.
- 151-52 *Acting* (2-2) Vorenberg
Introductory study of the techniques of acting, as applied to various styles of dramatic form. Prerequisite: Speech 11, 32. Laboratory fee, \$3 a term. Lecture and laboratory (3 hours)—Afternoon.
- 155-56 *Stagecraft* (2-2) R. Stevens
Construction and painting of scenery. Laboratory fee, \$5 a term. Lecture and laboratory (3 hours) with additional hours on each major production. Afternoon.
- 157-58 *Theatre Management* (2-2)
The psychology of press agency, building the subscription audience, box office and the buying public, the house manager in his own domain, treatment of public by personal contact between and during shows, "Selling theatre". Lectures and practical work on the public performances. Evening.
- 160 *Costuming* (2) R. Stevens
A study of the basic characteristics of period costumes and their adaptation for the stage. Laboratory fee, \$5. Lecture and laboratory (3 hours) with additional hours on each public production. Evening.
- 163-64 *Play Direction* (2-2) Mangum
The problems involved in directing plays. Admission by permission of the instructor. Laboratory fee, \$5 a term. Lecture and laboratory (3 hours). Evening.
- 165-66 *History of the Theatre* (2-2) Vorenberg
A general survey of the rise of the theatre, the Classical, Medieval, Renaissance, later English and Continental, and the Modern theatre. Admission by permission of the instructor. Evening.
- 167 *Playwriting* (3) Mangum
The theory and technique of playwriting. Admission by permission of the instructor. Evening.

- 169 *Scene Design and Stage Lighting* (2) R. Stevens
A study of design and lighting as applied to the artistic and practical stage setting. Prerequisite: 155-56. Laboratory fee, \$5. Lecture and laboratory (3 hours) with additional hours on each public production. Afternoon.
- 175-76 *Speech Correction* (3-3) Crawford
A study of the causes of the disorders of speech with emphasis on methods in diagnosis and treatment of defective speech. Prerequisite: Speech 11 and 101 or permission of the instructor. Laboratory fee, \$3 a term. Afternoon.
- 178 *Clinical Practice* (1) Crawford
Case work in remedial speech. This course may be repeated for a total of three credit hours. Prerequisite: Speech 175. Time to be arranged.
Speech 178x—same as Speech 178, but offered fall term. Time to be arranged.
- 180 *Speech Pathology* (3) Crawford
An advanced study of the causes and symptoms of the major physiogenic and psychogenic speech disorders. Prerequisite: permission of the instructor. Afternoon.
- THIRD GROUP
- 251 *Styles in Acting* (3) Vorenberg
A historical investigation and application of period styles and other styles evolving from dramatic forms. Prerequisite: Speech 151. Evening.
- 254 *Advanced Play Direction* (3) Mangum
A study of modern styles in staging plays and modified techniques from the Greeks to the nineteenth century theatre. Prerequisite: Speech 163-64. Evening.
- 263-64 *Seminar* (3-3) Mangum
- 299-300 *Thesis* (3-3) The Staff

STATISTICS

*Frank Mark Weida, Ph.D., *Professor of Statistics, Executive Officer*
 Everett Herschel Johnson, Ph.D., *Associate Professor of Statistics*
 Solomon Kullback, Ph.D., *Lecturer in Statistics*
 Dorothy Morrow Gilford, M.S., *Lecturer in Statistics*
 Charles Lawrence Marks, A.M., *Instructor in Statistics*
 Marie DiMario Wann, Ph.D., *Instructor in Statistics*

Minimum requirements for the major (Field-of-Study).—Prerequisite: Mathematics 12, 19, and 20; Philosophy 121, 122; an introductory course in one of the social sciences, one of the biological sciences, or one of the physical sciences. Required: an understanding of the underlying mathematical theory employed to characterize, compare, and elucidate quantitative or qualitative measurements which are found in Statistics 115-16, 117, 118, 155-56, 157-58; a minimum of twenty-four credit hours of second-group courses in departments unrelated to statistics. For further details, consult the adviser.

FIRST GROUP

51 *Elementary Statistics* (3)

The Staff

Collection of data, classification and tabulation, averages, construction and use of index numbers and quotients, dispersion, analysis of frequency distribution, time series, correlation, and graphic presentation. Prerequisite: one entrance unit in algebra. Laboratory fee, \$5. Lecture (2 hours)—morning and evening sections; laboratory (2 hours)—morning, afternoon, and evening sections. (Also offered 1950 summer term.)

Statistics 51x—same as Statistics 51, but offered winter term. Morning and evening sections.

52 *Mathematics of Finance* (3)

The Staff

Interest and discount, annuities, valuation of stocks and bonds, sinking funds, amortization, valuation of depletable assets, depreciation, building and loan associations. Prerequisite: one entrance unit in algebra. Morning and evening sections. (Also offered 1950 summer term.)

Statistics 52x—same as Statistics 52, but offered fall term. Morning and evening sections.

53 *Introduction to Statistics in Psychology and Education* (3)

Weida and Staff

Sources of data, tabulation, charts and graphs, averages, dispersion, quartiles and percentiles, raw scores and derived scores, profiles, norms and their use, frequency distributions, intelligence and other quotients, reliability and validity of tests, normal curve, correlation, elementary sampling, statistical error, limitations of statistics. Prerequisite: one entrance unit in algebra. Laboratory fee, \$5. Lecture (2 hours)—

* On sabbatical leave winter term 1950-51.

morning and evening sections; laboratory (2 hours)—afternoon and evening sections.

Statistics 53x—same as Statistics 53, but offered winter term. Morning and evening sections.

- 54 *Introduction to Actuarial Science* (3) Weida
Gompertz and Makeham laws of mortality, life contingencies, life annuity premiums, life insurance premiums, reserves, risk, cost, social and other types of insurance. Prerequisite: Statistics 52. Offered in 1951-52.

SECOND GROUP

- 104 *Statistics in Psychology and Education* (3) Wann
Advanced study of correlation and frequency analysis, sampling theory, factor analysis, and applications to specific problems utilizing case method of study insofar as possible. Original work is required of each student. Prerequisite: Statistics 53. Laboratory fee, \$5. Lecture (2 hours), laboratory (2 hours)—evening.

- †107-8 *Biostatistics* (3-3) Marks
Probability and significance, designing experiments, reliability of data, distributions, curve fitting, tests of significance, analysis of variance, correlation. Applications to genetics, anthropology, bacteriology, physiology, pharmacology, life tables, mortality rates and dose-mortality curves; as well as general biology. Prerequisite: one entrance unit in algebra. Offered in 1951-52.

- 111 *Business and Economic Statistics I* (3) Johnson
Applications of statistical methods to specific problems of business administration and economics. Scope of course includes averages, dispersion, frequency distributions, sampling, and simple correlation. Admission by permission of instructor. Morning and evening sections.

- 112 *Business and Economic Statistics II* (3) Johnson
Applications of statistical methods to specific problems of business administration and economics. Scope of course includes multiple and partial correlation, time series analysis, index numbers, business cycles, elasticity of demand and mortality schedules for depreciable property. Prerequisite: Statistics 111 or the equivalent. Morning and evening sections.

- †115-16 *Principles of Statistical Methods* * Weida and Staff
(3-3)

This course emphasizes the meaning, uses, and applications of: variates and attributes, measurement and enumeration, averages and dispersion, frequency distributions and their characteristics, errors of measurement and their control, index numbers, trends, cyclical relatives, purposive and random sampling in theory and practice and their errors and estimates, correlation in theory, practice, and applications. Prerequisite: one entrance unit in algebra. Laboratory fee, \$5 a term. Lecture (2 hours)—morning and evening sections; laboratory (2 hours)—afternoon and evening sections. (Also offered 1950 summer term.)

* Statistics 115-16 is for statistics majors, for students desiring to become statisticians, and for students in engineering and the biological and physical sciences.

- 117 *Analysis of Variance* (3) Marks
The analysis of variance and covariance to segregate factors producing significant variation, a method to estimate experimental error, multiple classification with unequal class frequencies. Prerequisite: Statistics 115-16. Evening. (Also offered 1950 summer term.)
- 118 *Correlation and the Chi-Square Test* (3) Marks
Advanced study of simple, partial, and multiple correlation. Rank correlation, the method of contingency, and the problem of normal and non-normal populations. Tests of independence, likeness, and goodness of fit. Prerequisite: Statistics 115-16. Evening. (Also offered 1950 summer term.)
- †155-56 *Mathematical Probability* (3-3) Marks
Definitions, enumeration of cases, total and compound probability, repeated trials, Bayes' theorem and postulate, Bernoulli's theorem and its experimental verification, mathematical expectation, law of large numbers and its applications. Prerequisite: Mathematics 20 and Statistics 115-16. Evening.
- †157-58 *Mathematical Statistics* (3-3) Gilford
Statistics as a science, types of problems, relative frequency and probability, binomial and multinomial distributions, Pearson system of curves, Gram-Charlier series, Cauchy distribution, correlation by regression method, Lexis theory of dispersion, generating functions, simple sampling theory, moments and semi-invariants. Prerequisite or concurrent registration; Statistics 155-56. Evening.
- 159 *Calculus of Observations* (3) Weida
Interpolation; finite differences; least squares and theories of error; method of iteration; numerical differentiation and integration; numerical solution of algebraic, transcendental, differential, and integral equations; errors of observation; practical Fourier analysis; empirical formulas; and curve fitting. Prerequisite: Statistics 115-16 or permission of the instructor. Evening.
- 160 *Quality Control Techniques* (3) Weida
Characteristics; scientific basis; reduction in cost of inspection, rejections, and tolerance limits; quality as an attribute; distribution of quality characteristics; laws basic to control; statistical and maximum control; detection of lack of control. Prerequisite: Statistics 111-12 or permission of the instructor. Offered in 1951-52.
- 161-62 *Techniques of Statistical Analysis* (3-3) Weida
Industrial and other statistics, planning experiments, selection of techniques, sampling theory and practice. Prerequisite: Statistics 158 or the equivalent. (Not offered in 1950-51.)
- †197-98 *Statistical Mathematics* * (3-3) Kullback
Matrix algebra, quadratic forms, contour integration, measure theory, Stieltjes integration, Cauchy theory of residues, n-dimensional geometry in flat spaces. Prerequisite: Mathematics 139 or the equivalent. Evening.

* Statistics 197-98 is prerequisite to all third-group courses except Statistics 203, 204, 205, 206.

†199-200 *Proseminar: Theoretical and Applied Statistics (3-3)*

Weida

In addition to the study of recent advances in statistical methods, this course is designed to coordinate the content of the baccalaureate major. Admission by permission of the instructor. Time to be arranged.

THIRD GROUP *

201 *Design of Experiments (3)*

Gilford

Relative merits of random, repeated, stratified, and double sampling; Fisher-Pitman method of randomization; randomized blocks; Latin squares; factorial design; confounding, partial confounding. (Not offered in 1950-51.)

202 *Theory of Estimation and Testing Hypotheses (3)*

Gilford

Statistical hypotheses; maximum likelihood estimate; Markoff's best estimate; Neyman-Pearson theory of testing hypotheses; Bayes' theory; consistent, efficient, and sufficient statistics; theory of confidence intervals. (Not offered in 1950-51.)

†203-4 *The Theory of Econometrics (3-3)*

Johnson

Statistical methods applied to the analysis of production, supply, and demand; utility and disutility; interest and taxation; exchange. Stress is placed on the interpretation of results in terms of probability. Correlation and regression of time series. Admission by permission of the instructor. Evening.

†205-6 *Advanced Business and Economic Statistics (3-3)*

Johnson

Application of statistical methods to specific problems utilizing case method insofar as possible. Emphasis is placed on source materials, role of statistical methods, techniques of analysis, interpretation and presentation of results. Original work is required of each student. Prerequisite: Statistics 112 or the equivalent. 1951-52 and alternate years.

†257-58 *Advanced Mathematical Statistics (3-3)*

Weida

Mathematical basis of distribution functions, moments and cumulants, probability and likelihood, sampling distributions exact and approximate, Chi-square distribution, association and contingency, various conceptions of correlation, individual difference problem, time series, regression analysis, analysis of variance, theories of inference. Offered in 1951-52.

†259-60 *Advanced Mathematical Probability (3-3)*

Kullback

Modern theories and asymptotic laws; elementary theory of definite integration; limit theorems in probability; the contributions of Cramer, Frechet, Kolmogoroff, Khintchine. Prerequisite: Statistics 257-58 or the equivalent. (Not offered in 1950-51.)

* Statistics 197-98 is prerequisite to all third-group courses except Statistics 201, 201.205, 206.

- †263-64 *Statistical Inference* (3-3) Kullback
Sample space; methods for estimating population parameters; fiducial inference and its application to testing hypotheses; valid, efficient, and exact estimation; Student's distribution; variance distribution; sampling statistics, i.e., moments and cumulants used as estimates of population parameters and used to test hypotheses. Prerequisite or concurrent registration: Statistics 259-60 or the equivalent. (Not offered in 1950-51.)
- †265-66 *Multivariate Analysis* (3-3) Kullback
Tests of significance, generalized variance and covariance, tests of independence, canonical and vector correlations, multivariate normal distribution, generalized Student's ratio, problems of estimation, applications to factor analysis. Evening.
- †267-68 *Characteristic Functions* (3-3) Kullback
Fourier integrals, set functions, inversion formulas, limit theorems, applications to the distribution problem in statistics. Offered in 1951-52.
- †269-70 *Sequential Testing* (3-3) Weida
Efficiency of sequential tests, sequential probability ratio test, expected number of observations necessary for a decision, truncated sequential analysis, sequential tests of single and composite hypotheses. Offered in 1951-52.
- 295-96 *Reading and Research* (3-3) Weida
Admission by permission of the instructor. Time to be arranged.
- 299-300 *Thesis* (3-3) Weida

SURGERY

- Brian Blades, A.B., M.D., *Professor of Surgery, Executive Officer*
 Daniel LeRay Borden, A.M., M.D., *Clinical Professor of Surgery*
 Paul Stirling Putzki, M.D., *Clinical Professor of Surgery*
 Arch Lockhart Riddick, B.S., M.D., *Clinical Professor of Surgery*
 William Berry Marbury, M.D., *Clinical Professor of Surgery*
 Custis Lee Hall, M.D., *Clinical Professor of Surgery*
 John Hugh Lyons, M.S., M.D., *Clinical Professor of Surgery*
 Paul Budd Magnuson, M.D., *Adjunct Clinical Professor of Surgery*
 John Gordon Lee, A.B., M.D., C.M., Med. Sc.D., *Adjunct Clinical Professor of Surgery*
 Sam Foster Seeley, B.S., B.M., M.D., *Adjunct Clinical Professor of Surgery*
 Wallace Harry Graham, B.S., M.D., *Professorial Lecturer in Surgery*
 Herbert Hermann Schoenfeld, M.D., *Associate Clinical Professor of Surgery*
 Alec Horwitz, M.S., M.D., *Associate Clinical Professor of Surgery*
 William Stanley McCune, A.B., M.D., *Associate Clinical Professor of Surgery*
 Edward James Beattie, Jr., M.D., *Assistant Professor of Surgery*
 Benjamin Franklin Dean, Jr., M.S., M.D., *Assistant Clinical Professor of Surgery*
 Vincent Michael Iovine, B.S., M.D., *Assistant Clinical Professor of Surgery*
 Carl Berg, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Calvin Trexler Klopp, A.B., M.D., *Assistant Clinical Professor of Surgery*
 Julius Salem Neviaser, A.B., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Jerome Blaine Harrell, M.D., *Assistant Clinical Professor of Surgery*
 Leonard Theodore Peterson, A.B., B.S., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Richard Knight Thompson, D.D.S., *Associate in Dental Surgery*
 William Ross Morris, M.D., *Associate in Surgery*
 Harold Walter Krogh, D.D.S., *Associate in Dental Surgery*
 Jacob Joseph Weinstein, B.S., Phar.G., M.D., *Associate in Surgery*
 William Carey Meloy, M.D., M.S. in Med., *Associate in Surgery*
 Edward Alexander Cafritz, M.D., *Associate in Surgery*
 Walter Henry Gerwig, Jr., A.B., M.D., *Associate in Surgery*
 Rhodes Carl Garby, A.B., M.D., *Instructor in Surgery*
 Hazen Eugene Cole, B.S., M.D., *Clinical Instructor in Surgery*

- Crenshaw Douglas Briggs, B.S., M.D., *Clinical Instructor in Surgery*
 William Wiley Chase, A.B., M.D., *Clinical Instructor in Surgery*
 Arthur James Mourot, B.S., M.D., *Clinical Instructor in Surgery*
 Joseph Francis Conlon, D.D.S., *Clinical Instructor in Dental Surgery*
 Otto Anderson Engh, A.B., M.D., *Clinical Instructor in Surgery*
 Duane Case Richtmeyer, A.B., M.D., *Clinical Instructor in Surgery*
 Richard Lee Jackson, M.D., *Clinical Instructor in Surgery*
 Leon Gerber, M.D., *Clinical Instructor in Surgery*
 Thomas Bradley, A.B., M.D., *Clinical Instructor in Surgery*
 Lloyd Byron Burk, Jr., M.D., *Clinical Instructor in Surgery*
 Ernest Alva Gould, M.D., *Clinical Instructor in Surgery*
 Austin Bertram Rohrbaugh, Jr., M.D., *Clinical Instructor in Orthopedic Surgery*
 T. Wiley Hodges, A.B., M.D., *Clinical Instructor in Orthopedic Surgery*
 George Alfred Higgins, B.S., M.D., *Clinical Instructor in Surgery*
 Marvin Hayne Kendrick, A.B., M.D., *Clinical Instructor in Surgery*
 Brooks Gideon Brown, B.S., M.D., *Clinical Instructor in Surgery*
 Gordon Sparks Letterman, A.B., B.S., M.D., *Clinical Instructor in Surgery*
 Lois Irene Platt, A.B., M.D., *Clinical Instructor in Surgery (Cancer Cytology)*
 John Decator Hoyle, B.S., M.D., *Clinical Instructor in Surgery*
 Henry Leon Feffer, A.B., M.D., *Clinical Instructor in Orthopedic Surgery*

- 280 *Introduction to Surgery* The Staff
 One hour twice a week. Lectures and recitations covering the field of general surgery.
- 284 *Surgical Physiology* The Staff
 A clinical and laboratory course with particular emphasis on applied physiology. Two hours a week.
- 373-74 *Clinical Clerkship I* The Staff
 The student is assigned and required to work up thoroughly the cases for diagnosis and treatment. Gallinger Hospital.
- 375-76 *Ward Walks* The Staff
 Group ward rounds are made with the visiting physicians and their respective staffs in the course of their usual rounds. Gallinger Hospital.
- 377-78 *Orthopedics I* The Staff
 Weekly orthopedic lecture, Gallinger Hospital; weekly three-hour orthopedic clinic, Surgery Outpatient Department, University Hospital.
- 379-80 *Surgical Staff Conference I* The Staff
 Tuesday at Gallinger Hospital; Wednesday at the University Hospital.

- 383-84 *Surgical Clinic I* Blades
Demonstration of various surgical diseases to the entire third- and fourth-year classes. One hour a week.
- 385 *Surgical Anatomy* Horwitz
Two one-hour lectures a week. University Hospital.
- 391-92 *Surgical Pathology I* Hill
One hour conference each week.
- 473-74 *Clinical Clerkships II* The Staff
Available at the University, Walter Reed, Emergency, and Mt. Alto hospitals.
- 477-78 *Orthopedics II* The Staff
Weekly orthopedic lecture, Gallinger Hospital; weekly three-hour orthopedic clinic, Surgery Outpatient Department, University Hospital.
- 479-80 *Surgical Staff Conference II* The Staff
Tuesday at Gallinger Hospital; Wednesday at the University Hospital.
- 483-84 *Surgical Clinic II* Blades
Demonstration of various surgical diseases to the entire third- and fourth-year classes. One hour a week.
- 491-92 *Surgical Pathology II* Hill
One hour conference each week.
- 493-94 *Surgical Diseases of the Chest (Elective)* Blades and Staff
Patients with various diseases of the chest, including the lungs, mediastinum and esophagus are presented. The cases are followed from week to week and operative specimens and microscopic sections are demonstrated. Walter Reed Hospital. Two hours a week.

UROLOGY

Frederick A. Reuter, M.D., *Professor of Urology, Executive Officer*
 Thomas Carlton Thompson, B.S., M.D., *Clinical Professor of Urology*
 Gilbert Ottenberg, A.M., M.D., *Associate in Urology*
 William Dabney Jarman, B.S., M.D., *Clinical Instructor in Urology*
 Edward Egner Ferguson, M.D., *Clinical Instructor in Urology*
 Leon Richard Culbertson, B.S., M.D., *Clinical Instructor in Urology*
 Gordon Rhodes MacDonald, M.D., *Clinical Instructor in Urology*
 Herbert DeGrange Wolff, Jr., M.D., *Clinical Instructor in Urology*

395-96 Clinics

The Staff

Clinical teaching and demonstrations on the care of urological cases with special emphasis on the pre- and post-operative management. Operative clinics and clinical teaching. Gallinger Hospital.

491-92 Urology

Reuter and Staff

Lectures covering the entire field of urology including diagnosis, treatment, and morbid pathology. One hour a week.

495-96 Clinics

Reuter and Staff

Clinical demonstrations and teaching in the Outpatient Department, with special attention given to diagnostic procedures. Emergency and University hospitals. One part of each section daily.

ZOOLOGY *

Donnell Brooks Young, Ph.D., *Professor of Zoology*
 Ira Bowers Hansen, Ph.D., *Professor of Zoology, Executive Officer*
 Kenneth Casper Kates, Ph.D., *Professorial Lecturer in Zoology*
 Edith Elizabeth Mortensen, Ph.D., *Associate Professor of Zoology*
 Francis Lincoln Lambert, B.S., *Instructor in Zoology*

The major in Zoology (Field-of-Study).—Prerequisite: Zoology 1-2. The student must, at the end of his senior year, exhibit a correlated knowledge of the following fields: (1) classification, structure, and ecological relations of animals, both invertebrate and vertebrate; (2) embryological development and life histories of important animal types; (3) general principles of physiology, heredity, and evolution; (4) the development of biological principles, hypotheses, and theories as revealed in the study of the history of zoology.

The student will obtain this knowledge in part by taking courses offered in these fields and in part by individual study under the direction of his adviser. For further details, see the pamphlet on this subject or consult the adviser.

FIRST GROUP

1-2 *Introduction to Zoology* (4-4) Young, Lambert

An introduction to the study of the structure, functions, and relation of animals, and of the fundamental biological principles involved. Material fee, \$4.50 a term. Lecture (2 hours)—morning and evening sections; laboratory (4 hours)—morning, afternoon, and evening sections. (Also offered 1950 summer term.)

Zoology 1x—same as Zoology 1, but offered winter term. Morning.

Zoology 2x—same as Zoology 2, but offered fall term. Morning.

41-42 *Comparative Vertebrate Anatomy* (3-3) Hansen

Lectures on the organ systems of the vertebrates; laboratory dissections of types. Prerequisite: Zoology 2. Material fee, \$6 a term. Lecture (1 hour)—afternoon and evening sections; laboratory (4 hours)—morning, afternoon, and evening sections. (Also offered 1950 summer term—Zoology 142 (3).)

SECOND GROUP

101-2 *Invertebrate Zoology* (3-3) Mortensen

A systematic study of invertebrate forms, including the study of morphology, classifications, life histories, and phylogenetic relationships. Occasional field trips. Prerequisite: Zoology 1-2 or Biology 1-2. Material fee, \$4.50 a term. Lecture (1 hour); laboratory (4 hours). Afternoon and evening sections.

105 *Entomology* (3) Munson

A study of the elementary morphology, physiology, and ecology of insects, with an introduction to the taxonomy of the more important

* See also the departments of Biology and Botany, pages 174-75, 174-75.

groups. Prerequisite: Zoology 1-2, or the equivalent. Material fee, \$5. Lecture (1 hour), laboratory (4 hours)—morning. (Also offered 1950 summer term.)

122 *Zoological Theories* (3) Young

A review of the theories which have affected the development of the various phases of the progress of Zoology. Prerequisite: Zoology 1-2 and one additional year of a biological science. Morning.

137 *Histology* (3) Young

An introduction to the microscopical anatomy of normal tissues and organs. Prerequisite: Zoology 1-2. Material fee, \$6. 1950-51 and alternate years, lecture (1 hour); laboratory (4 hours)—afternoon. 1951-52 and alternate years—evening. (Also offered 1950 summer term.)

144 *Introduction to Vertebrate Embryology* (3) Hansen

The origin and early development of the individual and the formation of organ systems. Emphasis is placed on the frog, chick, and pig, with reference to the human embryo. Prerequisite: Zoology 2, and 41 or 42. Material fee, \$6. Lecture (1 hour); laboratory (4 hours)—afternoon. (Also offered 1950 summer term.)

Zoology 144x—same as Zoology 144, but offered fall term. Evening.

147-48 *Experimental Morphology* (3-3) Hansen

Lectures and class reports on experimental morphology. Prerequisite: Zoology 41-42 or the equivalent. 1950-51 and alternate years, evening.

152 *Protozoa* (3) Mortensen

An introduction to the protozoa: classification, life histories, and physiology, with special emphasis on free-living types. Prerequisite: Zoology 1. Material fee, \$4.50. Lecture (1 hour); laboratory (4 hours). 1951-52 and alternate years, evening.

156 *Parasitology* (3) Kates

An introduction to the study of animal parasitology, with a survey of parasitic types from protozoa through arthropods. Prerequisite: Zoology 1-2 or the equivalent. Material fee, \$6. Evening.

171-72 *Special Problems* (3-3) The Staff

Written approval of the instructor is required. Material fee, \$6 a term. Time to be arranged.

199-200 *Proseminar* (3-3) The Staff

A course designed to correlate and supplement the work of zoology majors. Morning and evening sections.

THIRD GROUP

203-4 *Seminar in Invertebrate Zoology* (3-3) Mortensen

Time to be arranged.

214 *Advanced Invertebrate Zoology* (3) Mortensen

Lectures and laboratory work on problems in invertebrate physiology. Prerequisite: Zoology 1 and 101-2 or the equivalent. Material fee,

\$4.50. Lecture (2 hours); laboratory (2 hours). 1950-51 and alternate years, evening.

251-52 *Seminar in Vertebrate Zoology* (3-3) Hansen
Time to be arranged.

295-96 *Research* The Staff
Investigation of special problems. Time and credits to be arranged.
(Also offered 1950 summer term.)

299-300 *Thesis* (3-3) The Staff
Time to be arranged. (Also offered 1950 summer term.)

STUDENT LIFE

STUDENT LIFE

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is, on the Campus, a Student Health Clinic open from 9:00 A.M. to 5:00 P.M., with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school; (2) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period. For a statement of the rules governing medical and hospital privileges, see the Department of Health Administration.

LIVING ACCOMMODATIONS

Women Students.—Women students under twenty-one years of age who are enrolled for twelve or more credit hours of academic work in the University must have their residences approved by the Director of Activities for Women before their registrations can be completed. In the Hattie M. Strong Residence Hall and Staughton Residence Hall, single rooms are \$30 and \$35 a month; double rooms are \$23 and \$28 a month a person. Meals are served at the Student Union. Applications for rooms should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women.

Men Students.—Welling Hall provides double room facilities for 102 students. Rooms rent for \$24 a month a person. Single and double rooms are provided for 203 students in Draper and Bradley Halls. These are temporary dormitories and residence is restricted to veterans of World War II who are enrolled for a minimum of twelve credit hours of academic work in the University. Single rooms are \$17 a month; double rooms are \$13 a month a person. The University maintains a limited number of temporary apartment units for married veteran students and their families subject to the same requirements for tenancy as above. Meals are served at the Student Union. Application forms for reservations may be obtained from the Director of Activities for Men.

Information concerning private rooming and boarding facilities near the University for women students twenty-one years of age or older and for men students may be obtained at the offices of the Director of Activities for Women and the Director of Activities for Men. The reservation of rooms in private houses must be made by students.

RELIGIOUS LIFE

The University recognizes the contribution that religion can make to the education of its students by encouraging them to participate in denominational clubs of their own choice. National Catholic, Hebrew, and Protestant bodies sponsor these religious organizations, which act as links between the University and the local churches. The Director of the University Chapel and the advisers to the various denominational organizations are available throughout the year for consultation on personal problems.

UNIVERSITY CHAPEL

The University Chapel is maintained as a non-sectarian expression of the faith of the University in the contribution that religion can make to the education of its students. Twenty-minute services are held Wednesday of each week at 12:10 P.M. Representative clergymen of Washington are guest speakers at these non-denominational services.

STUDENT PLACEMENT OFFICE

The Student Placement Office provides assistance to students and alumni seeking full- and part-time employment. This office maintains a registry of vacancies in the Government and in private industry and refers qualified applicants for appointment. Information is also available on Civil Service examinations. The Placement Office arranges for interviews between students and those representatives of national, regional, and local business and industrial organizations who periodically visit the University.

The prospective student who expects to earn part of his expenses and who does not have a definite appointment to a position should have the means of support for at least one term. The obtaining of a position is contingent on so many factors that immediate employment cannot be assured.

VOCATIONAL COUNSELING

The Washington Counseling Center, established by the University, is at 2011 H Street NW. The Center offers educational and vocational counseling service, advice on social and personal problems, a psychometric

service in tests and measurements, and the use of files of occupational information and training opportunities.

STUDENT UNION

The Student Union, 2125 G Street NW., is the center for student life. From the cafeteria and snack bar on the first floor to the game room on the fourth floor, it is well planned to meet the students' need for meals, study, recreation, and activities. In addition to the recreation lounge and social lounge the Student Union provides office space for the Student Council and for the other major student organizations.

The Student Activities Office, also in the Student Union, has available information concerning the student organizations and campus events.

INTERNATIONAL HOUSE

The International House, 2116 G Street NW., is the social center for students from foreign countries. A series of teas, dances and other forms of entertainment, and the use of club rooms and lounge enable students to become acquainted and feel at home in the University.

The International Students' Society, now in its eighteenth year, welcomes as members students from other lands as well as North American students.

The Adviser to Students from Foreign Countries, whose office is in International House, is available for advice and guidance.

STUDENT ACTIVITIES

DIRECTORS OF STUDENT ACTIVITIES

The University maintains the offices of the Director of Activities for Men and the Director of Activities for Women, for the guidance of students in all nonacademic phases of student life, such as, student activities, social life, and housing. The directors are available for individual counseling concerning personal adjustment to university life.

STUDENT GOVERNMENT

Student Council

The Student Council is responsible to the Director of Activities for Men and the Director of Activities for Women for the conduct of all student activities. Members of the Council are elected annually.

Committee on Student Life

The Committee on Student Life, composed of five faculty members and six student members, is the judicial branch of the student govern-

ment. It may review acts of all student organizations, including the Student Council, with power to set aside such acts if they are unconstitutional.

Approval of Student Organizations.—The establishment of new student organizations must have the approval of this Committee. No student club or society (except social fraternities, sororities, scholastic honor societies, religious or professional clubs or societies) organized as a branch or affiliate of a non-George Washington University organization will be recognized by the Committee on Student Life.

ELIGIBILITY FOR STUDENT ACTIVITIES

Any student registered in The George Washington University who has a general average of not less than C (2.00) is eligible to participate in non-athletic student activities, subject to conditions specified by the local or national organization, approved by the Committee on Student Life.

The rules and policies of the Southern Conference govern participation in intercollegiate athletics.

The control and administration of all student activities are outlined in a separate bulletin.

STUDENT ORGANIZATIONS

HONOR SOCIETIES

Phi Beta Kappa.—A national honor society recognizing "outstanding intellectual capacity well employed" in the field of liberal arts and sciences. Senior and junior students who are candidates for the degree of Bachelor of Arts or Bachelor of Science in Columbian College (in exceptional cases, senior and junior students in other non-professional divisions of the University) and who have shown broad cultural interests, distinguished scholarly achievement, high character, general promise, and scholarly ideals may, to a number not exceeding 15 per cent of a class, be elected to membership by the Faculty members of the Alpha Chapter of the District of Columbia.

Sigma Xi.—A national scientific honor society, the purpose of which is to encourage original investigation in science pure and applied. Outstanding graduate students in the sciences are eligible for full membership, and undergraduates who have shown marked ability in research may be elected to associate membership.

Alpha Lambda Delta.—A national fraternity established to encourage and reward high scholarship and attainment, membership in which is

limited to those freshman women who attain a scholastic average of at least 3.50.

Alpha Pi Epsilon.—An honorary fraternity for students in home economics.

Artus.—A national economic society.

Delphi.—An intersorority society.

Delta Sigma Rho.—A national forensic honor society.

Gate and Key.—An interfraternity society.

Iota Sigma Pi.—A national honorary chemical society for women.

Kappa Kappa Psi.—A national honor society for college bandmen.

Mortar Board.—A national honorary society for senior college women, stressing leadership, scholarship, and service.

Omicron Delta Kappa.—A national fraternity emphasizing leadership in extracurricular activities.

Order of the Coif.—A national legal society, the purpose of which is to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship. Members are elected each year from the highest 10 per cent of the graduating class of the Law School.

Phi Eta Sigma.—A national fraternity, established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman men who attain a scholastic average of at least 3.50.

Pi Delta Epsilon.—A national honorary collegiate journalism fraternity.

Pi Gamma Mu.—A national social-science society.

Psi Chi.—A national honorary psychology fraternity.

Sigma Pi Sigma.—A national honorary physics fraternity.

Sigma Tau.—A national engineering fraternity, the purpose of which is to recognize scholarship and professional attainment.

Smith-Reed-Russell Society.—A scholastic society in the School of Medicine. Students of the third and fourth years who maintain a scholastic average of 86 per cent are eligible for associate membership.

William Beaumont Medical Society.—A society founded with the object of encouraging and stimulating medical students in work of individual investigation.

PROFESSIONAL ORGANIZATIONS

Alpha Chi Sigma (chemistry), Alpha Epsilon Iota (medicine), Alpha Kappa Psi (commerce and economics), Alpha Zeta Omega (pharmacy), American Institute of Electrical Engineers (student chapter), American Institute of Radio Engineers (student chapter), American Pharmaceutical Association (student branch), American Society of Civil Engineers (student chapter), American Society of Mechanical Engineers (student chapter), Chi Upsilon (geology), Delta Phi Epsilon (foreign service),

Delta Theta Phi (law), Future Teachers of America, Gamma Eta Gamma (law), Kappa Beta Pi (law), Mortar and Pestle (pharmacy), Nu Sigma Nu (medicine), Phi Alpha Delta (law), Phi Chi (medicine), Phi Delta Delta (law), Phi Delta Epsilon (medicine), Phi Delta Gamma (graduate), Phi Delta Kappa (education), Phi Delta Phi (law), Phi Pi Epsilon (foreign service), Pi Lambda Theta (education), Society for the Advancement of Management (student chapter), Theta Tau (engineering).

SOCIAL FRATERNITIES

Sigma Chi, Kappa Sigma, Kappa Alpha, Theta Delta Chi, Phi Sigma Kappa, Sigma Alpha Epsilon, Sigma Phi Epsilon, Phi Alpha, Sigma Nu, Acacia, Tau Kappa Epsilon, Pi Kappa Alpha, Argonauts, Tau Epsilon Phi, Alpha Epsilon Pi, Delta Tau Delta, Phi Epsilon Pi.

SOCIAL SORORITIES

Pi Beta Phi, Chi Omega, Sigma Kappa, Phi Mu, Alpha Delta Pi, Delta Zeta, Kappa Delta, Phi Sigma Sigma, Zeta Tau Alpha, Kappa Kappa Gamma, Delta Gamma, Kappa Alpha Theta.

DEPARTMENTAL CLUBS

Art Club; Case Club; Charles Clinton Swisher History Club; Colonial Forensic Team; Dance Production Groups, I, II, III; El Club Español; Engineering Council; George Washington University Geographical Society; Home Economics Club; Howard E. Kane—A.F.A. King Obstetrical Society; Le Cercle Français; Lester F. Ward Sociological Society; Literary Club; Mathematics Club; Oquassa; Psychology Club; Radio Workshop; Schoenfeld Verein; Speech and Hearing Society; Student Bar Association.

RELIGIOUS ORGANIZATIONS

Baptist Student Union, B'nai B'rith Hillel Foundation, Canterbury Club, Christian Science Organization, Lutheran Student Association, Newman Club, Religious Council, Wesley Club, Westminster Foundation.

MUSICAL ORGANIZATIONS

Girls' Glee Club, Men's Glee Club, University Band.

STUDENT PUBLICATIONS

The Cherry Tree (the annual), *The University Hatchet* (weekly newspaper), *The George Washington Law Review*, *Mecheleciv* (engineers' publication), *The Percolator* (pharmaceutical publication), *The Colonial Review* (literary magazine).

OTHER ACTIVITIES

Alpha Theta Nu (scholarship winners), Big Sisters, Chess Club, Colonial Boosters, Current Affairs Club, Hellenic Society, Independent Students' Association, Inter-fraternity Council, Inter-fraternity Pledge Council, International Students' Society, Intersorority Athletic Board, Junior Panhellenic Association, Martha Washington Club, Masonic Club, Pistol Association, Sailing Association, Senior Panhellenic Association, Staughton Hall Council, Strong Hall Council, Student Council, Student Veterans of World War II, The George Washington University Players, Women's Recreation Association, World Government Seminar Group.

There is a complete program of intramural sports for both men and women.

INDEX

INDEX

A

- Absence, regulations concerning
SEE Attendance
- Academic Council, xxi-xxii
- Academic status of the University, 6
- Accounting:
Associate in Arts curriculum in, 61
- Bachelor of Arts curriculum in, 59-60, 145-46
- Courses in, 161-63
- Master of Arts curriculum in, 147, 149
- Activities, student, 327-28
SEE ALSO special bulletin
- Administration, officers of, xix-xx
- Administrative Assistants, lxiv-lxviii
- Admission, 11-19
- Advanced standing, 12-13
- Advertising, courses on, 178, 226
- Advisory system, Junior College, 51-52
- American Thought and Civilization, major in, 73, 74-75
- Anatomy, courses in, 164, 264, 269, 320
- Anesthesiology, courses in, 165
- Aptitude tests, 12, 43, 52
- Art, courses in, 166-67
- Arts and Sciences, college of, 63-79
- Attendance, 36, 40
SEE ALSO under Colleges, Schools, and Divisions
- Auditor, 23, 38
- Awards, 29-34

B

- Bacteriology, courses in, 168-69
- Biochemistry, courses in, 170-71
- Biology, courses in, 172-73
- Botany, courses in, 174-75
- Buildings of the University, 7-9
- Business Administration:
Bachelor of Arts curriculum in, 59-60, 144-45
- Courses in, 176-79
- Master of Arts curriculum in, 147, 149

C

- Calendar for 1950-51, vii-xi
- Change in program of studies, 38
- Chapel, 326

- Chemistry, courses in, 180-84
- Civil Engineering:
Courses in, 185-87
- Curriculum in, 112-13
- Classical Languages and Literatures, courses in, 188
- Classification of students, 19, 70, 106
- Clinics, School of Medicine, 92-93
- College Entrance Board examinations, 12
- Colleges, Schools, and Divisions, 5
- Columbia College (senior college of liberal arts), 63-79
Entrance requirements, 13-14, 56-57
Prerequisite to Bachelor of Arts and Bachelor of Science curricula in, 68-69
- Commencement
SEE Graduation
- Committees of the Faculty, xxiii-xxiv
SEE ALSO under Colleges, Schools, and Divisions
- Communications option in Electrical Engineering, 114
- Contents, table of, v-vi
- Convocation
SEE Graduation
- Correspondence Courses, 70
- Counseling, courses on, 200, 288, 290, 291
- Course numbers, explanation of, 159-60
- Courses of instruction, 157-322
- Credit:
Credit hour, explanation of, 160
- Credit hours, maximum allowed full- and part-time students
SEE Colleges, Schools, and Divisions
- Explanation of amount of, 160
- Toward a degree, 38-39
- Transfer of:
For correspondence and home study courses, 70
- For professional courses, 72
- For summer school work, 39
- From other institutions, 12-13, 14, 15, 16, 17
- Within the University, 72, 152, 154

D

Dance, courses on, 264, 265, 266, 268, 269, 270

Degrees:

Associate in Arts, 54-62

In accounting, 61

In Secretarial Studies, 61

Bachelor of Arts, 71-73, 74-76

In Education, 130-31

In Government, 142-47

Bachelor of Civil Engineering, 111-13

Bachelor of Electrical Engineering,

111-12, 114-15

Bachelor of Laws, 106

Bachelor of Mechanical Engineering,

111-12, 115-16

Bachelor of Science, 71-73, 73-76

In Engineering, 111-12, 116-17

In Home Economics, 130, 132

In Pharmacy, 121-24

In Physical Education for Men,

130, 132-33

In Physical Education for Women,

130, 133-34

Civil Engineer, 117-18

Combined Bachelor of Arts and

Doctor of Medicine, 71, 73, 97

Doctor of Education, 137-38

Doctor of Juridical Science, 107

Doctor of Medicine, 96-97

Doctor of Philosophy, 82-87

Electrical Engineer, 117-18

Juris Doctor, 106

Master of Arts, 76-79

In Education, 134-37

In Government, 147-51

Master of Comparative Law, 107

Master of Laws, 107

Master of Science, 76, 77-79

In Pharmacy, 124-26

Mechanical Engineer, 117-18

Dermatology, courses in, 189

Dismissal of students, 41-42

Distinction, degrees with, 40-41, 62,

97, 106

Divisional Organization, 68

Doctoral Dissertation, form of, 40

Dormitories, 325

Dramatics, courses on, 309-10

Dropping courses, 37-38

E

Economics, International, Foreign Af-

fairs, Master of Arts curriculum in,

148-49

Economics, courses in, 190-95

Education:

Courses in, 196-201

School of, 127-38

Entrance requirements, 18, 57-59

Educational Facilities of the Univer-

sity, 7-9

Electrical Engineering:

Communications option in, 114

Courses in, 202-4

Curriculum in, 112, 114

Power option in, 115

Eligibility for student activities, 328

Emeritus Faculty, xxv-xxvi

Employment, student, 326

Endowment of the University, 4

Engineering:

Courses in, 185-87, 202-4, 237-39

School of, 108-18

Entrance requirements, 17

English:

Courses in, 205-9

Placement examination, 52, 206

Entrance requirements, 13-19

Examinations, 37

College Entrance Board, 12

For admission, 12, 43

For placement in language courses,

52

For qualifying for advanced stand-

ing or waiving curriculum require-

ments, 62, 72-73, 146-47

See Also in University calendar

Graduate Record, 12

Physical, 22

Scholastic aptitude tests, 43, 52

F

Faculty:

Alphabetical list, xxvii-lxiii

Standing committees, xxiii-xxiv

Fees, 21-23

Fellowships, 24-25, 87

Financial aid, 34-35

Financial regulations, 21-23

Foreign Affairs:

Bachelor of Arts curriculum in, 60,

143-44

Master of Arts curriculum in, 148-

49

Foreign Commerce, major in, 144-45

Foreign language:

Placement examination, 52

Requirements, 55

Foreign Service, curricula in

See Foreign Affairs

- Foreign Service Review Course, 151
Fraternities, 330
French:
 Courses in, 296-98
 Placement examination, 52
- G
- Genetics, course on, 172
Geography, courses in, 210-12
Geology, courses in, 213
Germanic Languages and Literatures, courses in, 214-15
Government, School of, 139-51
 Entrance requirements, 18-19, 59-60
Government and Economic Policy, Master of Arts curriculum in, 147-48, 150
Grades, 36-37, 95, 105
Grading system, 36-37, 95, 105
Graduate Council, 14, 80-87
 Fields of research, 82-84
Graduate Record examination, 12
Graduate study, 5
 See Also Degrees
Graduation:
 Application for, 39
 Dates
 See University calendar, ix-xi
 Requirements, 39-40
Greek, course in, 188
Gynecology, courses in, 247-49
- H
- Health Administration, Department of, 216, 325
Health Services, student, 216, 325
History:
 Courses in, 217-21
 Of the University, 3-4
Home Economics:
 Courses in, 222-24
 Curriculum in, 58, 132
Home-study courses, 70
Honor Role, 54
Honor societies, 328-29
Honors, 40-41, 62, 97, 106
Hospital, University, 91, 92-93
Hospitalization, 216, 325
Hours of instruction, 159
 In the Law School, 103
Hygiene, course on, 169
- I
- Independent study plan, 70, 142
"In residence" status, 40
Insurance, courses on, 177, 192, 312
- International law, courses on, 231, 233, 282, 283, 284
International Relations:
 Foreign Affairs fields in,
 For the Bachelor's degree, 143-44
 For the Master's degree, 148-49
 Master of Arts field in, 76-79
Intern training program, 97
Internship, 34
- J
- Journalism, courses in, 225-26
Junior College, 47-62
 Entrance requirements, 13
- L
- Labor, courses on, 176, 179, 192, 194, 231
Laboratory fees and deposits, 21
 See Also Courses of Instruction
Language placement examination, 52
Language requirements, 55
Languages and Literatures, Division of, 68
Latin, courses in, 188
Latin America, courses on, 193, 195, 212, 219, 220, 282, 283
Latin American Civilization and Culture, Columbian College major in, 73, 74-75, 190
Law:
 Course of study for foreign lawyers, 102
 Courses in, 227-33
 Review, 101
 School, 99-107
 Entrance requirements, 15-17
Leave of absence, 40
Liberal Arts, college of, 63-79
Library, 9, 41-42
 Hours, 41-42
 Law, 41, 101
 Medical, 42, 92
 Regulations, 41
Linguistics, courses on, 207, 208, 215
Living accommodations, 325-26
Loan funds, 34-35
Location:
 Of the School of Medicine, 7
 Of the University, 6
- M
- Major fields in Columbian College, 74-76
Marketing, courses on, 177, 178, 179, 226

- Master's degrees
 SEE Degrees
 Mathematics, courses in, 234-36
 Mathematics and Physical Sciences,
 Division of, 68
 Mechanical Engineering:
 Courses in, 237-39
 Curriculum in, 112, 115-16
 Medical Privileges, 216, 325
 Medical Technologists course, 98
 Medicine:
 Postgraduate instruction in, 97-98
 School of, 88-98
 Entrance requirements, 14-15
 Undergraduate courses in, 240-44
 Military Science and Tactics, courses
 in, 245
 Musical Organizations, 330
- N
- Natural Sciences, Division of, 68
 Neurology and Neurological Surgery,
 courses in, 246-49
- O
- Obstetrics, courses in, 247-49
 Ophthalmology, courses in, 250
 Order of the Coif, 103, 329
 Organizations, student, 328-31
 Orthoptic Technician training course,
 98
 Oto-rhino-laryngology, courses in, 251
- P
- Pathology, courses in, 252
 Pediatrics, courses in, 253-54
 Personnel Administration:
 Courses on, 176, 179, 200, 239, 282,
 288, 291, 292
 Master of Arts curriculum in, 147-
 48, 150
 Pharmacology, courses in, 255
 Pharmacy:
 Courses in, 256-60
 Curriculum in, 122-24
 Examinations before state boards of,
 121
 School of, 119-26
 Entrance requirements, 17-18, 57
 Phi Beta Kappa, 328
 Philosophy, courses in, 261-62
 Physical Education:
 Courses in:
 For Men, 263-67
 For Women, 268-72
 Curriculum:
 For Men, 59, 132-33
 For Women, 59, 133-34
 Requirements, 39
 Physical examinations, 39, 216
 Physical Medicine, courses in, 273
 Physics, courses in, 274-77
 Physiology, courses in, 278-79
 Placement tests, 52, 206
 Political Science, courses in, 280-84
 Portuguese, courses in, 298-99
 Postgraduate Medicine, 97
 Power option in Electrical Engineering,
 115
 Premedical curriculum, 13, 15, 56
 Preventive Medicine, courses in, 169
 Prizes, 29-34
 Probation:
 SEE UNDER Colleges, Schools, and
 Divisions
 Property, responsibility for, 42
 Psychiatry, courses in, 285-86
 Psychology, courses in, 287-92
 Public Administration:
 Courses on, 281, 283
 Master of Arts curriculum in,
 147-48, 150
 Public relations, course on, 225
 Publications, student, 330
- Q
- Qualifying examinations, 62, 72-73,
 146-47
 SEE ALSO in University Calendar
 Quality-point index, 37
- R
- Radio, course on, 308
 Radiology, courses in, 293
 Reading clinic, 129, 197, 198, 201
 Records, transcripts of, 38
 Recreation, Physical Education spe-
 cialty in, 133, 134
 Refunds, 23
 Registration, 20
 Regulations, 36-42
 SEE ALSO UNDER Colleges, Schools,
 and Divisions
 Religion, courses in, 294-95
 Religious organizations, 326, 330
 Reserve Officers' Training Corps (Med-
 ical), 96
 Residence halls, 325

Residence requirements, 39-40
 SEE ALSO UNDER Colleges, Schools,
 and Divisions
 Resident training program, 97
 Romance Languages and Literatures:
 Courses in, 296-301
 Placement examinations, 52
 Rules of the University, right to
 change, 42
 Russia, courses on, 218, 220, 281, 282

S

Sanskrit, course on, 215
 Scholarship, 36-37, 39
 SEE ALSO UNDER Colleges, Schools,
 and Divisions
 Scholarships, 25-29
 Scholastic Aptitude tests, 43, 52
 Schools, Colleges, and Divisions, 5
 Secretarial Studies:
 Courses in, 302-3
 Curriculum in, 61
 Self help, 326
 Semester hour
 SEE Credit Hour
 Shorthand, courses on, 302-3
 Sigma Xi, 328
 Social Sciences, Division of, 68
 Sociology, courses in, 304-6
 Sororities, 330
 South America, courses on:
 SEE Latin America
 Spanish:
 Courses in, 299-301
 Placement examination, 52
 Special Students, Division of, 19, 153-
 54
 Speech:
 Clinic, 307
 Courses in, 307-10
 Staff of Instruction, alphabetical list,
 xxvii-lxiii
 Statistics:
 Bachelor of Arts curriculum in, 60,
 146
 Business and Economic, 147, 149
 Courses in, 311-15
 Student:
 Activities, 327-31
 SEE ALSO Special Bulletin

Bar Association, 102
 Employment, 326
 Life, 323-31
 Organizations, 328-31
 Publications, 330
 Summer Sessions, 155
 Surgery, courses in, 316-18
 Surveying, courses on, 185, 186, 187
 Suspension:
 SEE UNDER Colleges, Schools, and
 Divisions

Syphilology, courses in, 189

T

Theatre, courses on, 309-10
 Thesis, requirements for, 40
 Transcripts of records, 38
 Trustees:
 Board of, xv-xvi
 Committees of the Board of, xvii-
 xviii
 Tuition, 21
 Typewriting, courses on, 302

U

University Students, Division of, 19,
 152
 Urology, courses in, 319

V

Veterans, 43-44
 Vocational counseling:
 Courses on, 290, 291
 Master of Arts curriculum in, 147-
 48, 150
 Washington Counseling Center, 43,
 326-27

W

Warnings, 55
 Washington Counseling Center, 43,
 326-27
 Withdrawal, 23, 37-38

Z

Zoology, courses in, 320-22

THE UNIVERSITY RECORD

SUMMER TERM 1949

FALL AND WINTER TERMS 1949-50

DEGREES CONFERRED

JUNIOR COLLEGE

ASSOCIATE IN ARTS

NOVEMBER 11, 1949

Abrams, Edwin Fred	D.C.	Close, Franklin John	N.J.
Abrams, Israel Jacob	Calif.	Cochran, Douglas McCord	Pa.
(With distinction)		Coil, Emory Alfred	Ohio
Adams, Frederick Fowler	D.C.	Colevas, Prokopes	D.C.
Adams, James Ronald	W.Va.	Conant, Robert Charlton	D.C.
Agersborg, James Albert Zahl	Ill.	Conway, Emmett Gaddis, Jr.	Va.
Ainley, James Edward, Jr.	Md.	Craig, William Franklin	Va.
Albright, Frank Glenn	W.Va.	Creekmore, Russell Whitfield, Jr.	Va.
Allen, Thomas Howard	D.C.	Creson, David Boone	D.C.
Allinger, Dorothy Ann	Md.	Crichton, Charles Franklin	D.C.
Anderson, Helen Margaret	Md.	Crowley, James Worthington	Tenn.
Anderson, Nora Agnes	Fla.	Dallachiesa, Albert Fortunato	Va.
Andrews, Anna Vaughan	Mass.	Dane, Michael Nicholas	Pa.
Ansello, Dolores Bess	N.J.	Davenport, John Hobson	Va.
Anzaldúa, Fausto	Tex.	Davidson, Roy Aaron	D.C.
Ash, John Michael	D.C.	Davis, Kenneth Lee	D.C.
Babb, Eugene Campbell	Va.	DeCesare, Rita Lucille	D.C.
Bailey, Charles Robert	D.C.	Detling, Harold Clarence	Md.
Ballard, Ralph Campbell	D.C.	DeUngria, José S.	Philippines
Basgar, John Raymond	Fla.	Devay, Robert Brown	Ohio
Barrow, Claude Arnold	N.C.	DeWitt, Maynard Browning	D.C.
Barwick, Joel Richard	Md.	Diamond, Jack Kenneth	D.C.
Batson, Donald Purdy	D.C.	Ding, Adolfo Solomano	D.C.
Bassus, Frank William, Jr.	Tex.	Dichter, Jack C.	N.J.
Beardmore, Walter Harvey	Md.	Dickson, Robert Carl, Jr.	D.C.
Beavers, Virginia Lee	D.C.	DiMartino, Horace Robert	Mass.
Bell, Gerald Irwin	D.C.	Donaldson, John Charles Lochman	Fla.
Beloff, Abraham Philip	D.C.	Donaldson, John Eldridge, Jr.	D.C.
Benson, Carol Eliason	Va.	Donohue, John Andrew	N.Y.
Berger, Samuel Morris	Pa.	Downs, Robert Jack	Okla.
(With distinction)		Draver, Clarence Prowell	D.C.
Berish, Robert Martin	Pa.	Dries, Edward Thomas	N.Y.
Berlinaky, Louis	D.C.	Dunbar, John Paul	D.C.
Berry, Arland Northwood	Md.	Dunphy, Robert Giles	R.I.
Biller, Paul Stanley	N.Y.	Edgar, Jean Nelson	Va.
Biskar, Aaron	D.C.	Eilers, James Paul	Md.
Bittermann, Kathleen Studdart	Minn.	Fisher, Jerome	N.Y.
Blongh, Glennoirre Ethel	Pa.	Ellis, Frances Howard	D.C.
Bolan, Joseph James	Pa.	Engelman, Phyllis Claire	D.C.
Bolton, Vivian Reynolds	Pa.	Fadeley, Jane McNeal	D.C.
Borzilleri, Paul Thomas	N.Y.	Falkinburg, Harry James	N.J.
Boulay, René André	Mass.	Feltman, David Brown	Va.
Brown, Catherine Marie	D.C.	Francis, Milton John	Md.
Bruce, William Averett	Okla.	Freer, Barry Sullivan	Ohio
Buchbaum, David Jules	N.J.	Gallaehar, Barbara Blaine	D.C.
Buckberg, Morton L.	D.C.	Gachukle, Melvin	D.C.
Buehle, Cyril Anthony	N.Y.	Garrett, Anthony Matthew, Jr.	N.C.
Burdett, Melvin	D.C.	Garver, Clifford Elliott	S.D.
Burnon, William Miles	D.C.	Gasque, Martha McKay	D.C.
Byrne, James Anthony	N.Y.	Giannone, Charles D.	N.J.
Cahoon, Lynda Lee	Va.	Gillette, Noeth Bolling	Mont.
Carnick, Lester Forest	D.C.	Gilmour, Robert Andrew	Conn.
Cavillo, Guido	Mass.	Givell, Mary Caroline	D.C.
Chillemi, Richard Leo	N.Y.	Goldbaum, Annette Davis	Md.
Christoph, Kathryn Helen	D.C.	Goldman, Albert L.	N.Y.
Clay, Harry Clifton, Sr.	D.C.	Gore, Mary Augusta	D.C.
Clayton, Christopher Sudlow	D.C.	Graff, Wendell Eugene	Pa.

Greenbaum, Hilda Joan	D.C.	Massie, Cary Winston	Va.
Greenburg, Bertram	D.C.	Maupin, James Carey	Calif.
Greene, Edward Allen	Md.	Maurry, Ann Henderson	Md.
Greene, Harold H.	D.C.	Mazza, Louis Francis	Va.
Grimes, John Francis	Va.	McGriff, LaDonna Lee	Utah
Groves, Gerald Richard	Va.	McKinley, Francis Randel	D.C.
Hailey, Lyman Griffith	Va.	McKnight, Michael J.	D.C.
Hall, James Granville, Jr.	Pa.	McMillan, Robert Hampton	D.C.
Hammond, Kenneth Fabian	D.C.	Meadows, Richard Carl	D.C.
Hart, Nelson Perry	D.C.	Meigs, Edward Douglas	Idaho
Hawkins, Herman Edmond	Ga.	Melheim, Arnold Curtis	D.C.
Heller, Milton	D.C.	Merchant, Edward Joseph	D.C.
Hennessy, Charles Edward	Md.	Mercoliano, Charles Eugene	D.C.
Herring, Donald Dewar	Mass.	(With distinction)	
Hildreth, David Melvin	D.C.	Miller, Theodore Arnold	Pa.
Hildreth, Margaret Sage	Md.	Miller, Walter Wallace	D.C.
Himes, Theodore Christian	D.C.	Moore, Patricia Mary	Va.
Hollingsworth, William Leon	Miss.	Morgan, Edward Till	S.C.
Holloway, John Ennis	Md.	Mosman, Kenneth Freeman	Mass.
Honey, Nancy Lee	Mass.	Muir, Donald Beldon	D.C.
Hulfish, Harriett Virginia Folger	Va.	Mulhall, Francis Joseph, Jr.	D.C.
Hutmire, Edward William	Calif.	Murdock, Robert Barnard	D.C.
Iseri, Kathleen T.	Calif.	Murphy, Patricia Ann	Md.
Jeffers, John Cordell	Va.	Nalls, John Willard, Jr.	D.C.
Jerome, Charles Joseph	N.Y.	Nisson, George Wendell	N.Y.
Johnstone, James Bruce	Mich.	Nordholm, Eric Grege	D.C.
Jones, Benjamin Perry, Jr.	N.C.	Norman, Richard Arthur	Minn.
Jones, Calvin Clark	D.C.	Noemandeau, Keith Joseph	Mass.
Jones, Harry Lee, Jr.	Mo.	Nuttman, Harold Franklin	D.C.
Jones, James Mitchell	D.C.	O'Keefe, George Aloysius	Ohio
Kalina, Beatrice Josephine	N.Y.	Olmert, Robert Francis	Tenn.
Kannenberg, Myron Hollis	Minn.	Olsavsky, Steve Anthony	D.C.
Karazkas, Fleni Pericles	D.C.	Owens, Marcus Orlando, Jr.	D.C.
Kadow, Herbert	D.C.	Parker, Thomas	D.C.
Katz, Morton Harry	Md.	Parry, James Davidson	Mich.
Kearney, William Robert	N.J.	Pasbach, Lawrence Robert	Pa.
Kessinger, Charles Daniel	La.	Pattavan, Con Chris	Tenn.
Khan, Mohammad Karamatulla	India	Patterson, John Edward	D.C.
Kim, Grace M.	Hawaii	Peoples, Irvine Warren	Md.
King, Pericles	Va.	Penn, William Allen	Va.
Knowles, Edward William	Mass.	Pierce, Olivia Baulez	D.C.
Kopek, John Longin	N.Y.	Plaskett, Anne Elisabeth	D.C.
Korn, Norman	N.Y.	Platky, Leon David	D.C.
Korostoff, Bernhard	N.Y.	Poulase, Gus Nicholas	D.C.
Kouzel, Howard	D.C.	Prenipe, Leonardo	D.C.
Kudysh, Morton	N.Y.	Prenipe, Nicholas Vincent	D.C.
Kulp, John Wesley	D.C.	Preston, Shirley Andrew	Md.
(With distinction)		(With distinction)	
Kunz, George Theodore	Fla.	Pucher, Katharine Lloyd	D.C.
Landman, Robert Samuel	Va.	Puzzini, John	Pa.
Lappin, John Eldridge	D.C.	Queenstedt, Una Rita	D.C.
Laurence, Edwin Anthony	D.C.	Rabin, Joseph Edward	N.Y.
Lawson, Alice Joyce	N.Y.	Randolph, John Lewis	Va.
Lennan, Alvin Brooks	Md.	Rappaport, Bernard Raymond	Ill.
Leslie, Charles Walton, Jr.	D.C.	Restor, Alfred Rozier	D.C.
Lewis, Jack Collins	Md.	Reas, Robert Stewart	Va.
Liesener, Victor Frank Robert	Wis.	Reitman, Robert Stephen	N.J.
Lind, Robert Neal	Va.	Ring, Paul Donald	N.C.
Lindberg, Carl Donald	Md.	Robin, Joseph Sigmund	D.C.
Lohr, Betty Ann	D.C.	Roberts, James Winfield, Jr.	Va.
Lowe, Joseph William	W.Va.	Rolph, John Fletcher III	D.C.
Lynn, Lloyd Edward	D.C.	Rosen, David Selig	N.Y.
Mabry, Shirley Ann	D.C.	Rosson, Barbara Ruth	D.C.
MacArthur, Edgar Huston	D.C.	Rowe, Shirley Case	D.C.
Mackensen, Judith Annes	D.C.	Russell, Melvin Lewis	Kans.
MacKrell, James Joseph	N.Y.	Russell, William Fred	Md.
Magee, Robert Henry	Va.	St. Thomas, Dorothy Laird	D.C.
Mamish, Julia	W.Va.	Salvati, Savorio Ralph	N.Y.
Mankin, Arthur Kenneth	D.C.	Sanchez, Burdette Boardman	Pa.
March, Francis Andrew, Jr.	Va.	Schellenberg, Paul Herbert	Va.
Marshall, John C.	Tenn.	Scherff, Roger Alan	Md.
Martin, Thomas Archie	Ill.	Schram, Dorothy Jean	D.C.

Schuyler, Shirley	Va.	Tessell, Jane Kathryn	Conn.
Seley, Florence Leiken	Conn.	(With distinction)	
Seltzer, Orie	D.C.	Thrift, Sterling Reynolds	D.C.
Shank, Robert Edgar	Md.	Tibbatts, Robert Cash	Mo.
Shapley, Ellen	D.C.	Tuley, Emerson Scott	Md.
(With distinction)		Todd, Vernon Richard	Md.
Sherwood, Frederick	Va.	Tolson, Raymond Lee	Va.
Shields, Benjamin Bayard	Fla.	Trotter, Thomas Kenneth	Va.
Shields, Elise Tine	Md.	Trussell, Galen Douglas	D.C.
Shoemaker, Randall, Jr.	Va.	Tuckman, Charles William	N.Y.
Siegfried, Robert Ellwood	Ohio	Tyrrill, Richard Campbell	N.Y.
Silver, Charles B.	N.J.	Vagiera, Edward Edwin	Fla.
Simmons, Dorothy Jean	D.C.	Walinsky, Edward Pius	Pa.
Simmons, Richard Paul	Md.	Watkins, Henry Lee	Va.
Simpson, Joseph	Calif.	Weingarten, Hyman	N.Y.
Smith, J. Gordon	Md.	Weintraub, William Chodoff	D.C.
Smith, William Parkhurst, Jr.	D.C.	Wetzel, Elizabeth Marceron	Va.
Spinner, Jack Robert	D.C.	Weld, Dorothy Anne	Va.
Squire, William Harry	Pa.	Winstel, Roy Thornton	D.C.
Steck, Philip Clifford	W.Va.	Whittington, James Gordon, Jr.	N.C.
Sterling, Milton Calvin	Md.	Will, Oscar Vernon	Md.
Stewart, Elijah King	Okla.	Williams, Janice Ruth	D.C.
Stoner, Merle McLaughlin	Pa.	Williams, Marion Louise	Md.
Sullivan, Charles Xavier	R.I.	Williams, William Barron	Mass.
Sullivan, John Christian	Md.	Wiken, Eugene	D.C.
Summers, Leonard	D.C.	Wood, Edwin Charles	D.C.
Suntay, Aurora Silvia	Philippines	Wyckoff, Donald Latham	N.Y.
Sutherland, Julian Hoyt	Ohio	York, Warren Monroe, Jr.	D.C.
Swanston, Charles William	Va.	Zanelli, Alfred	N.Y.
Sweet, John Manko	Pa.	Zucker, Morton David	N.Y.
Taeves, Anne	Colo.	Zurad, Bruno H.	Ill.
Telchin, Stanley Shay	Md.		

FEBRUARY 22, 1950

Abellón, Esther Marina	Cuba	Caldwell, Margaret	Va.
Alexander, Ronald McKenzie	D.C.	Callow, John Henry	D.C.
Alexiou, Louis	N.Y.	Carpenter, William Otis	Ky.
Anderson, Kenneth Arthur	Ill.	Caswell, Ruth Virginia	D.C.
Andrews, Lee Austin	Calif.	Cavallaro, Vilma A.	N.Y.
Andrews, Norman Jacob	N.Y.	(With distinction)	
Antonelli, Francis Anthony	D.C.	Chertoff, Mitchell	N.Y.
Antoun, Edmond John	Pa.	Chryssakis, Joseph Evangelos	D.C.
Arrick, Alma Arlene	Ohio	Cisna, Frances Lathrop	D.C.
Baliab, Nicholas John	Va.	Coates, Augusta Maude	Md.
Barnes, Kenneth Clark	N.C.	Coe, Anna Hopton	Md.
Baylinson, Richard Norman	N.J.	Cohen, Bernard	D.C.
Beach, Kenneth Herbert	Ohio	Cohen, Robert Henry	D.C.
Becker, Eugene Joshua	N.Y.	Cohen, Rosa Naomi	D.C.
Becker, Joseph	D.C.	Conason, Emanuel Voltaire	N.Y.
Beilstein, Christian William	D.C.	Conklin, Charles Robert	Va.
Bell, Joseph Thomas	D.C.	Connell, Eugene Ambrose, Jr.	Md.
Bennett, Ralph Berry	D.C.	Cook, William Thomas	D.C.
Berlin, Jerome Irwin	N.Y.	Cookson, Joseph William	Kans.
Bernstein, Stanley Bertram	N.Y.	Corkum, Anna Elizabeth	Mass.
(With distinction)		Craft, Robert Harold	D.C.
Betzler, John Richard	Va.	Crandell, William Palmer	Md.
Bialek, Teddy	D.C.	Crisp, John Kibler, Jr.	Ga.
Bochert, Jessie Clara	N.Y.	Crumpler, Roland	N.C.
Bolt, Robert	N.Y.	Cummer, John Robert	D.C.
Borkowski, Walter Aloysius	N.J.	Cunningham, Catherine Beatrice	Okla.
Boyle, Betty Jean	Wis.	Dalton, Eileen Elizabeth	D.C.
Brady, Thomas Anthony	Mo.	Dalton, Rea Elizabeth	Va.
Brennan, Henry Stephen	N.J.	Dalrymple, James McIver	Va.
Brennan, James Joseph	Pa.	Daly, Elizabeth Teresa	Va.
Brody, Arthur Lionel	N.Y.	DeAngelis, Louis Benjamin	N.Y.
Brownson, Ernest Maitland	N.J.	Delabar, John Henry	Pa.
Brzozowski, Edmund Joseph	D.C.	DeMetz, Mary Katherine	D.C.
Budz, Henry Richard	Mass.	Dempey, Donald Crammer	N.J.
Burger, Joel Arthur	N.Y.	Devlin, Paul Andrew	Pa.
Burkert, Alfred, Jr.	D.C.	Dietrich, Jack Mitchell	Kans.
Butler, Claude Lee	Tenn.	Dow, Howard Fremont	Va.

Dressel, Robert James	D.C.	Monteith, Alice Jean	Va.
Drimmer, Miriam Weinberg	N.Y.	Moran, Andrew John	Pa.
(With distinction)		Murphy, James Palmer	Tex.
Dudley, Albert Frederick	D.C.	Myers, Thad Prentice, Jr.	Pa.
Duerksen, Sylvia	D.C.	Naeble, Henry Emil	Md.
Duncan, James Thomas	Ga.	Nicolopoulos, Dianna Georgia	D.C.
Earle, Elizabeth Rebecca	D.C.	Nikolic, Suzanne Mills	D.C.
Einbinder, John Colburn	Va.	Niles, Jack Stone	D.C.
Eisenberg, Bernard Carl	D.C.	Noite, Ann Elizabeth	D.C.
Ekman, Donald Quintin	D.C.	Notzstein, Charles Lewis	Okla.
Ellis, James Garfield	D.C.	O'Connor, Richard Leo	Calif.
Farley, Philip John	N.Y.	Osteid, Jack	Pa.
Fedirko, Natalia Bulatkin	D.C.	Padbury, Harry Rines	Maine
Flechel, Kurt Otto	Md.	Paste, Peter John	Mass.
Fleishman, Wilfred Edwin	Calif.	Peck, Millard, Jr.	Iowa
Foster, James Patrick	D.C.	Pendell, Martha Jane	Va.
Frankel, George L.	N.Y.	Periman, Elishava	Israel
Fry, George Edward	D.C.	Perry, John Kenneth	Calif.
Garner, Frederick Reed, Jr.	D.C.	Perron, Vernon James	Va.
Gestner, Evelyn Gifford	D.C.	Post, Beverly Suzanne	Ill.
Gheseling, William Marvin	Ga.	Pratt, Curtiss Robert	N.Y.
Gibbs, Ray Allison, Jr.	Va.	Price, Edwin	Md.
Gusti, Natalie Larsoff	Mass.	Price, Helen Vera	D.C.
Good, Elizabeth Sarah	Md.	Price, James Travis	Va.
Green, Edward Harrison	D.C.	Primm, Geraldine Viola	Md.
Green, Harold A.	N.Y.	Pryor, Mary Leah	D.C.
Groeling, Willard Earl	N.Y.	Rainsbury, Robert Charles	Va.
Groetman, Theodore Roger	D.C.	Ransom, Richard Burrus	N.Y.
Haste, Wilbert George	Neb.	Raynor, Marjorie Hildebrandt	D.C.
Harrington, David Michael	N.J.	Reed, William Clark	Pa.
Harrison, Maconnette Eulalie	D.C.	Reider, John Edward	D.C.
Hartman, Norma Claire	Calif.	Riggs, Edwin Eugene, Jr.	Va.
Heckman, Alexander Irving	D.C.	Roberts, Richard Edwin	D.C.
Heiler, George Thomas, Jr.	Tenn.	Rose, Herbert Edgar	N.Y.
Hertz, Howard Herschel	Fla.	Rosenblum, Stephen Clyde	N.Y.
Hoesper, Daniel Spencer	D.C.	Rosenthal, Donald Carrie	D.C.
Howard, William Reed	D.C.	Ross, William Hicks	Va.
Howarth, Shirley Claire	D.C.	Roughson, Arnold Ernest, Jr.	D.C.
Iandolo, Angelo John	N.Y.	(With distinction)	D.C.
Irwin, Mortimer Foster	D.C.	Rue, Audrey Hazel	N.Y.
Ishiyama, Kyako	Va.	Sabotini, Edmund John	Md.
(With distinction)		Sagle, Robert Franklin	D.C.
Jacob, Phyllis Eileen	D.C.	Samaha, Leslie Halim	Ga.
Jasper, James Dudley	Va.	Savels, John Clayton	Va.
Jones, Charles Clifford	Okla.	Seay, Ralph Matthew	D.C.
Jones, James Abraham	D.C.	Shacey, William Cluff	D.C.
Jorgenson, James Lewis	D.C.	Shuster, Alvin	D.C.
Joy, Helen Maxine	Va.	Sifton, Paul Ginsburg	Md.
Kane, Daniel Raymond	Mass.	Shivers, Richard Gates	N.Y.
Kent, Jack Howard	D.C.	Smith, Charles William	Md.
Kopp, John William	Va.	Smith, Harold Calmes, Jr.	D.C.
Kramer, Marvin Lewis	Va.	Smith, James Marshall	D.C.
Krentzlin, Julie Anna	D.C.	Smith, Yvonne Emily	Mass.
Krist, Barbara Teresa	D.C.	Smith, William Milton	N.J.
Konner, Lawrence Roy	Ill.	Snyder, Charles Joseph	D.C.
Laney, Marjorie Winters	D.C.	Spanthine, Jo Anne	Pa.
Larson, Donald Eugene	Minn.	Stein, Laura	D.C.
Latino, Giannina Maria	Mass.	Stevens, Dorothy Chedaker	D.C.
Lawless, William Josselyn, Jr.	Va.	Stevens, Willard Lamont	Va.
(With distinction)		Sergin, Mary Charlotte	Md.
Levin, Benzie	D.C.	Stringham, Gale Smedley	Ind.
Loe, Myron L.	D.C.	Stuart, Kenneth Earl	Mass.
Lonnen, Edmund Herman	S.D.	Sullivan, John Leo	D.C.
Lytle, Robert Eugene	Minn.	Szwed, Clarence Francis	Md.
Malone, Ralph Whitley, Jr.	Md.	Talley, Betty Jane	D.C.
Misoukian, Rachel Elizabeth	D.C.	Tharp, Mary Ann	D.C.
Madow, Howard Waring	Md.	Thomas, William Bates	D.C.
Mavridis, Photios Adam	Md.	Thompson, Albert Lacy, Jr.	D.C.
McCall, Barbara Ann	Ky.	Thornleyke, Myron Samuel	D.C.
McJellan, Ethel Shoemaker	Pa.	(With distinction)	Hawaii
McKone, Louis Roy	Tex.	Tong, Richard Koon Wong	Wash.
Mills, Jared Warner III	Va.	Toranzo, Roy R.	N.J.
Mohler, Jeanne Claire	D.C.	Tumarkin, Janet Beverly	

Uehlinger, John Clark	D.C.	Wismer, Carl Edward, Jr.	Va.
Valentini, Philip Indivott	D.C.	Wood, John Fred	N.C.
Vandegrift, Paula Bollenbacher	D.C.	Woodward, John Richard	Va.
Vicino, Dominio Joseph	D.C.	Workman, George Samuel	Md.
Waite, Nancy Jane	D.C.	Yarbrough, Joseph Benjamin III	D.C.
Walton, Howard Lacy, Jr.	D.C.	Yeager, Mary Ann	D.C.
Weintraub, Leo Martin	N.Y.	Young, Robert Stanley	D.C.
Williams, Earl, Jr.	Ill.	Yonemman, Wilbur Hughes, Jr.	Calif.
Williams, Leonard	Pa.		

MAY 31, 1950

Abend, Phillip Gary	D.C.	Coll, Robert Wilson	D.C.
Abrams, Yelwida Hillel	Md.	(With distinction)	
Adler, Raymond Harold	N.Y.	Conroy, William Harry	D.C.
Allen, Nancy Leigh	D.C.	Cosper, Burton M.	D.C.
Altman, Toby Thelma	Va.	Cordell, Peter Paul	Pa.
Anderson, Nancy	D.C.	Crossin, William Constantine	D.C.
Andes, Paul Gowdy	Fla.	Cresswell, Esther	N.J.
Andrews, Marilyn Brownfield	D.C.	Cross, Dan Norman	Iowa
Angel, Jerry Irwin	N.Y.	Davis, Hilda Jean	Va.
Arnos, Rose Mary	N.H.	Davis, Jean Marie	Md.
Bachofan, Leila Marie	D.C.	Deane, Frank B.	Tenn.
Baker, Jack	D.C.	Dean, Robert Murry	Mo.
Baloch, Stephen Elmer, Jr.	D.C.	Deek, William Meade II	D.C.
Bateman, William Raphael	D.C.	Devos, Charles, Jr.	N.Y.
Bayer, Jacob Weller	Mo.	Diamond, Lala Ruth	D.C.
Becker, Joseph Amala	D.C.	(With distinction)	
Bemisston, Ernest Raymond	R.I.	Dickson, William Francis	Va.
Bennett, Harry Bates	D.C.	Dill, Nancy Tucker	D.C.
Benson, Harriette Miller	Va.	Diorio, David	N.Y.
Benson, Wilbur Earle	D.C.	Dorosh, Edward Peter	N.Y.
Bereman, Melvin John	Va.	Dorsay, Jeanette	Va.
Bernstein, Paul	D.C.	Doughlass, John Robert	N.Y.
Bialek, Stanley Morris	D.C.	Downey, Alma Gayle	Nebr.
Brider, Albert	D.C.	Dressler, Dorothy Anne	Pa.
Blum, Frederick Laurence	N.Y.	Dulaski, Benedict Joseph	Mass.
Boaman, Royal Isaac	D.C.	Dulcie, Jerome Joseph	N.J.
Botz, Joan Frances	N.Y.	Dulkie, Joseph Augustine	Mass.
Boyer, Eugene George	Ind.	Dyer, James Arthur	Md.
Boyer, Joan Zelda	Mass.	Dusland, Robert Carroll	Md.
Brinks, Jean Oliver	D.C.	Ellis, Roberta Anne	Md.
Brody, Leonard Harry	N.Y.	Elman, Josef Katten	N.Y.
Bronstein, Max Wilfred	D.C.	Elmore, Willett	D.C.
Brown, James Robert	D.C.	Famous, Priscilla	Md.
Broz, Richard Francis	Wash.	Farquharson, Sue Wahle	D.C.
Brost, George A.	Md.	Fenton, Patricia Joanne	D.C.
Burhans, Cynthia Constance	Va.	Filipowicz, Casimir Anthony	N.Y.
Burka, Leon Harry	D.C.	Firnhaber, Frederick Stephen	D.C.
Burns, Francis Henry	Pa.	Fisher, Barbara Ann	Va.
Butler, Charles Edward	D.C.	Fitzpatrick, George Ruddell	Pa.
Calley, Helen Mead	Ga.	Flieger, Howard Wentworth, Jr.	Md.
Callaghan, Frances Goddard	D.C.	Foltz, John Frederick	N.Y.
Cantor, Neil Jay	D.C.	Ford, Robert Nelson	D.C.
Canulla, Guido John	Mass.	Fordham, Frank James	Md.
Caracciolo, Francis Samuel	D.C.	Fowler, Jessie Lorraine	D.C.
Cardano, Ferdinand Sabastian	Md.	Fox, Saul Aaron	N.Y.
Carlin, John Francis	Pa.	Freeman, Aaron Elliott	Va.
Carman, Hazel Mari	Calif.	Freeman, Phyllis Langhitt	D.C.
Carpenter, Edwin John, Jr.	N.Y.	Friedenberg, Ina Ruth	D.C.
Coalla, Roland Peter	Md.	Gaynon, Henry Joseph, Jr.	D.C.
(With distinction)		Galloway, Esther Augustine	N.C.
Chakeres, Peter	D.C.	Gallup, Elizabeth Hale	Md.
Chapline, Claudia Beechum	Va.	Gans, Joan Regine	N.Y.
Chester, Annabelle Johnnie	Calif.	Gartner, Robert Martin	D.C.
Chocola, Richard Adolph	Pa.	(With distinction)	
Clark, Malcolm Cameron	D.C.	Gentner, Walter Andrew	D.C.
Clausen, Margaret Mary	D.C.	George, Joseph Homen	Mass.
Cleary, Jeanne Audrey	D.C.	Giliotti, Peter Alfonso	D.C.
Coburn, Harriette Hartnett	D.C.	Gillespie, Constantine John	D.C.
Coleman, Harvey Ryon	Va.	Gillespie, George John	D.C.

Gimble, Gilbert Yosef	D.C.	Lambert, Peter Baldwin	D.C.
Ginsburg, Manny	D.C.	Lane, Elizabeth Walker	D.C.
Gnatt, Philip Myer	Calif.	Law, Susan Byrdella	D.C.
Goffer, Janus Elizabeth	D.C.	Lee, William M.	Va.
Goldsmith, Betsy	N.J.	Levinson, Arnold Seymour	Va.
Golin, Gerald	D.C.	Lewis, William Hubert	Mass.
Goodland, George Herman	D.C.	Lichtenstein, Lucille Gould	D.C.
Gordon, Fulton Ray	D.C.	Lilienkamp, Virginia Ruth	N.Y.
Gould, Warren	D.C.	Lindner, Thaddeus Alphonse	N.J.
Gray, Robert John	N.J.	Link, Robert Wendell	N.Y.
Grey, Leo	Va.	Livinston, Gordon Kendal	D.C.
(With distinction)		Lohman, Richard Herbert	D.C.
Guthery, Upton Keller	D.C.	Long, Billie Ketchie	D.C.
Guy, John Philip	D.C.	Lovell, Guy W.	D.C.
Hack, Eleanor B.	N.J.	Mabry, Carol Joan	D.C.
Halev, Louis Albin	Va.	Macdon, Edward Malcolm	D.C.
Hall, Lou Ann	D.C.	Makin, Lloyd John	D.C.
(With distinction)		Malkin, Jack	D.C.
Halpern, Esther	N.Y.	Marciniak, Frank Walter	N.J.
(With distinction)		Marschall, James Vincent	Va.
Hammond, Mary Evelyn Kent	D.C.	Marlow, Charles Austin	Calif.
Hanbury, William	D.C.	Mazowitz, David Daniel	D.C.
Hansel, Roger	D.C.	Marsh, Mary Louise	Va.
Harris, William Penn	Md.	McCarthy, John Robert	Ohio
(With distinction)		McGrew, Clinton Jackson, Jr.	Va.
Harrison, Alexander	Md.	McKay, Fred James	N.J.
Hart, Bobby Jack	D.C.	McMahon, Thomas Anthony	N.J.
Hartford, Thomas James, Jr.	D.C.	McNamara, Richard Vaughan	Iowa
Heart, Margaret Josephine	D.C.	Miller, Charles Robert	D.C.
Hewett, Norma Joan	Fla.	Miller, Herbert Junior	Ohio
Hildebrand, Robert John	Pa.	Miller, Mary	Mass.
Hill, Arlow Feilding	Colo.	Minor, Robert Center	Ga.
Hoffman, Howard Paul	N.Y.	Monsheimer, Louis Bertram	Va.
Hollis, Frank	D.C.	Montague, Helen Bovard	Va.
Houston, Robert Joseph	D.C.	Moore, Patricia Catherine	Va.
Howard, Sydney Harris	N.Y.	Mouré, Rupert Francis	Md.
Hudgens, Ann Shearer	Va.	Mourning, Henry Lee	D.C.
Hui, Wing Yam	China	Mullarkey, James Patrick	Ill.
Hunter, John Behr	W.Va.	Myers, Richard Ira	Pa.
Inglis, Robert Scott	D.C.	Nishi, James Akio	Hawaii
Insermi, Hiram Castillo	D.C.	Nobel, Louis N.	Pa.
Israel, Thomas Sewell	Md.	Novy, James Samuel	Va.
Jack, Paul Summers, Jr.	Va.	O'Donnell, Joseph Michael	Va.
James, Gladys Elizabeth	Va.	Oliff, Edward George	N.J.
Jewell, Joseph Thomas, Jr.	D.C.	Olsin, John Seymour	N.Y.
Jobe, Harrel Kent	Tex.	Ong, Harry Alfred, Jr.	D.C.
Johnson, Marjorie Pennington	Md.	Orenstein, Herbert Hyman	N.Y.
Johnson, Paul John	Ill.	O'Toole, Ursula Elizabeth	Mich.
Johnson, Robert Edwin	N.Y.	Padilla, George Mario	D.C.
Johnson, Victor Eric	Conn.	Pappas, Stephen Steve	Va.
Jones, Claggett Aloysius	D.C.	Parojinos, Simplicio Cuyano, Jr.	D.C.
Jones, Harry Clay	Va.	Paul, Mary Beth Koenig	D.C.
Jones, John Norvill	Ark.	Pell, Arthur Jack	Ill.
Jones, Robert Howard	Va.	Peppers, Richard Langford	Va.
Juárez, Joe Angel	Tex.	(With distinction)	Va.
Judd, Dean Burritt	Md.	Pérez, Wilda C.	Va.
Julius, Richard Friedli	D.C.	Perrott, Virginia Marie	D.C.
Kantowitz, Daniel George	D.C.	Perry, Beverly	Va.
Kaye, Norman N.	Pa.	Peterson, Patricia Ann	Pa.
Kellam, Donald Swift, Jr.	Va.	Polansky, John, Jr.	Del.
Kennedy, James Joseph	D.C.	Pollard, John Ray	D.C.
Kerish, Burton	D.C.	Pruett, Mary Evelyn	Wis.
Ketner, William Harry	Pa.	Pugh, Lindley Coates, Jr.	Mass.
Kevan, Robert Andrews	Va.	Rawnsley, George William	Md.
King, Joseph Frederick	D.C.	Redmond, Charles Bernhard, Jr.	D.C.
Klein, George Ralph	D.C.	Reichow, Estelle Vernon	Pa.
Kline, James Frederick	Pa.	Reisnyder, Harold Allison	Md.
Knight, Merrill Donaldson III	Va.	Reynolds, Patricia Amelia	Mich.
Koepte, Milton Elwood	Md.	Rhoades, Benjamin Anthony, Jr.	Okla.
Kolovic, Lilitana	Yugoslavia	Richards, Ralph Julian, Jr.	Conn.
Kramer, Joshua	N.Y.	Richardson, Walter John	D.C.
Kyne, Peter John	D.C.	Robbins, Louis Peters	Md.
Laine, Roland Oscar	Va.	Roberts, James Franklin	

Roberts, Nancy Catherine	D.C.	Stoyanoff, Stephen	Pa.
Romansky, George Joseph	Pa.	Struthers, Melvin, Jr.	Iowa
Roseman, Byron David	Mass.	Summers, Mary Jane	D.C.
(With distinction)		Swartzell, Irma Selma	D.C.
Rosenthal, Myra Natalie	D.C.	Swartzell, Lowell Stanley	D.C.
Rowe, Kathleen Wilson	D.C.	Szaryn, William Leo	N.J.
Russell, Betty Lucile	D.C.	Talbot, Marilyn Hunter	Va.
Ryder, Robert Burton	Conn.	Talbot, Leonard Murray	D.C.
Salzberg, Lorraine Muriel	N.Y.	Taylor, Harry Hall	Conn.
Salzberg, Ruth	D.C.	Taylor, Shelton Billy	Va.
Sanders, William Gerard	Va.	Tewar, Elizabeth Ann	Mass.
Sandwich, Marilyn Jane	D.C.	Thompson, Robert Earl	Mo.
Saunders, Nancy Nell	D.C.	Thrift, William Carrol	D.C.
(With distinction)		Tolliver, Robert James	S.D.
Scaffidi, Alfred	N.Y.	Tomasick, Ruth Alice	Pa.
Scanlan, Sidney Joseph	La.	Toxen, Arnold Martin	D.C.
Scarrow, William Arthur	Va.	(With distinction)	
Schifter, William	N.Y.	Tritle, Richard Reed	D.C.
Schiller, Alvin	Minn.	Udelson, Daniel Gerald	D.C.
Schlesinger, Jean	D.C.	VanZandt, Juanita Seay	Ky.
Schwartz, Simon	Md.	Vespele, Michael James	N.T.
Seckinger, Daniel Lamont, II	D.C.	Viehl, William	Puerto Rico
Seebold, Robert Elvin	D.C.	Voulgaris, Kristallo	D.C.
Selen, Mary Ellen	Va.	Wagner, Carlene Patricia	N.Y.
Seaton, John Montgomery	Conn.	Waldstein, Anne Marie	D.C.
Shade, Lavern Paul	Md.	Walker, Genevieve Marie	D.C.
Shamie, Emile Robert	N.Y.	Ware, Robert Stephens	D.C.
Shank, Joan Barry	D.C.	Watnick, Lawrence John	D.C.
Shaw, Elizabeth	D.C.	Weaver, Patricia Ann	N.Y.
Shreehan, William Francis	D.C.	Weismann, Max Ludwig	D.C.
Shelley, Francis Joseph	Pa.	Weitzel, James Russell	Md.
Shubley, Francis Wilhelm	Va.	Wells, Rebecca Roe	Ky.
Shirley, Reginald Douglas	N.Y.	Westcott, Raymond Arthur	Minn.
Sireve, Judith Hull	Va.	Westcott, Frederic Ballard, Jr.	Va.
Smith, Albert	D.C.	Whitman, Gretta Rae	D.C.
Smith, Janet Zella	D.C.	Wilson, Jesse Elma	Va.
Singer, Alan Milton	D.C.	Willard, William Craghton	D.C.
Sivers, Mary	D.C.	Willett, Marie Louise	D.C.
Skelly, John Thomas	Cuba	Williams, Elma	D.C.
Smith, Herbert Willard	D.C.	Wilson, Robert Crumpton	D.C.
Smith, James Oscar	Va.	Wilson, James Frederick	D.C.
Smith, Kendall Owen	Md.	Wilson, Jesse Lee	Mo.
Smith, Richard Henry	Va.	Yazge, Irene Elizabeth	D.C.
Smith, Thomas Lewis	Md.	York, Edgar Duane	Md.
Smith, William Christopher	D.C.	York, Jack	D.C.
Sokolowsky, William	N.Y.	Young, Jeanne Aglae Loring	D.C.
Spilliotis, Niki	D.C.	Yuill, Charles Walter, Jr.	D.C.
Stachura, Wendy Sue	Va.	Zamansky, Eleanor Belle	D.C.
Stanley, Gregory Quin	N.Y.	Zaslav, Joanna Elizabeth	Va.
Stapleford, LeRoy Brown	R.I.	Zaslav, Herman Joseph	N.I.
Stepanek, John James	Ill.	Ziff, Richard Newton	Conn.
Stevens, Joan Isabella	Va.	Zimond, Faye	D.C.
Stevens, Nancy Reynolds	Va.	Zimmer, Colver Frain	D.C.
Stiefel, Eleanor Brooke	Md.	Zubeck, John Thomas	Pa.
Stirling, Edwin Tillman	D.C.		

COLUMBIAN COLLEGE

BACHELOR OF ARTS

NOVEMBER 11, 1949

Anders, Frank Ward, Jr.	Md.	Brandt, Jean	Md.
Bailey, Arthur William	Conn.	Brown, Donald Arthur	D.C.
Baker, William Harold	Ill.	Bushnover, Frederick Sherman, Jr.	N.H.
Barnhart, Arthur Gooding	D.C.	(With distinction)	
Barrett, Beverly Mae	D.C.	Carpenter, Gladys Rosemary	Fla.
(With distinction)		Cervantes, Robert Martinez	N.Y.
Beesey, Joseph Bernard	N.J.	Cochran, Dean Farrington	Va.
Best, Harold Lloyd	N.Y.	Cohen, Herbert	N.Y.
Borsherdine, Earl William	Wia.	Connings, Samuel	D.C.
Boyle, Barbara Alice	N.Y.	Dessez, Lester	D.C.
Bradley, Mary Katherine	Va.	Donohue, Harold	Md.

Dorr, Lorita	D.C.	Nelson, Marjorie Bonnie	D.C.
Duncan, John Ogilvy	Va.	Nenhaus, Joan Lawrence	D.C.
Dunn, George Martin	N.Y.	Nonemaker, Charles Henry, Jr.	Pa.
Elkin, Benjamin	Ill.	O'Hara, Edward Michael	Minn.
Esch, Albert Frederick	D.C.	Oliver, Wallace Bryan	Va.
Fellers, Raymond David	N.J.	Paul, Charles Bennett III	D.C.
Flax, Miriam Andrey	N.Y.	Pavis, William Walter	Fla.
Frisman, Karl Herbert	D.C.	Pearson, James DeRemer III	Wis.
Fritz, Charles Walter	D.C.	Pearlman, Al B.	D.C.
Garrett, Paul Weatherly	D.C.	Phillips, Lawrence Vince	Va.
Geller, Irving	N.J.	Phuoney, Alan Yardley	D.C.
George, Myra Pittenger	Va.	Price, Betty Anne	D.C.
George, Richard Bennett	Va.	Puente, Joseph I.	D.C.
Gibson, James Frederick	Ill.	Ransall, Richard Rainer	D.C.
Giesekne, Charles Frederick	Va.	Roberts, Pauline	Ind.
Goodwin, Robert Joseph	Calif.	Rogal, William Walter	Va.
Gordon, Lester Howard	Mass.	Rue, Gloria Hope	D.C.
Haskaylo, Edward	W.Va.	Schankel, Norman George, Jr.	D.C.
Haddad, Adele Sylvia	Pa.	Schoonfield, Nellie Louise	W.Va.
Hall, Etta Juanita	Ark.	(With distinction)	
Hammel, Bernet George	N.J.	Schwartzbach, Saul Marvin	D.C.
Harrow, Robert Lee	N.Y.	Shesser, Ira	N.Y.
Haupt, Charles Caldwell	D.C.	Shupman, Grace Jones	Va.
Haxnes, Chester St. George	D.C.	Shuster, Jack Carl	D.C.
Hembry, John Towney	Tex.	Silver, Jacob Samuel	D.C.
Hendrix, Arthur Keith	Ill.	Silverman, Maurice Bernard	Ill.
Hullan, Thomas Harry	D.C.	Sloan, Richard	
Isaac, Charles Martin	D.C.	(With distinction)	
Jasper, Estelle Shirley	N.Y.	Slotemaker de Bruine, Jan Rudolph	Netherlands
Jaynes, John Thomas	Kans.	Small, Leonard	N.Y.
Jennings, Nancy Alice	Md.	Spencer, Mary Anderson	Pa.
Johnses, Peretz William	Ohio	Stauffer, Clyde Andrew, Jr.	Okla.
Johnson, Virginia Mildred	D.C.	Stewart, Elijah Kimp	Miss.
Jones, Aida Grierson	N.J.	Strickney, Herbert Camp	Va.
Klapper, Howard Jerome	N.Y.	Sunderman, Shirley Keuthan	Fla.
Kraus, Harriet Hill	Md.	Swearingen, Iris Inez	N.Y.
Krucoff, Darwin	Ill.	Teller, Hana	Pa.
Lagerquist, Walter Waldruff	N.Y.	Tanaseky, Walter J.	Md.
Larkin, Maureen	D.C.	Telchin, Stanley Shay	N.Y.
Lebeson, Shirley E.	D.C.	Troop, Harrison Donald	D.C.
Leer, James Edward	D.C.	Turner, Netta Elizabeth	Miss.
Lever, Irene Helen	D.C.	Walker, Thomas Jefferson	D.C.
Leysan, James Andrew	Mass.	Weinstein, Robert Earl	D.C.
Linehan, Daniel William	Mass.	Wentman, William Chasloff	Va.
Lovd, Arden Robinson	Va.	Wickinson, Richard Sterling	Pa.
Martin, Thomas Archie	Ill.	Wiesberg, John Walter	D.C.
Mason, Chavtor Diez	Va.	Woff, Joseph Jay	Ohio
Maxwell, Frederick Brooks, Jr.	Md.	Young, George Ellis	Okla.
McAvoy, Philip James	Maine	Young, Ina Marie	Md.
McClosky, Sylvester John	Pa.	Ziluh, Helen Josephine	Va.
Morris, Marian Miles	Ky.	Zimmerman, William III	N.Y.
Neill, James McDow	N.M.	Zweibel, Sidney A.	N.H.
(With distinction)		Zysk, John Joseph	

FEBRUARY 22, 1950

Adams, Mary Kathryn	D.C.	Darmstadter, Joel	D.C.
Anderson, Loretta May	D.C.	Dash, Robert Walter	N.Y.
Atkinson, Roderick Dhu	Va.	Dean, Mary Kendrick	D.C.
Barnes, Flora Marie	Va.	Dees, Lola Tidwell	D.C.
Bennett, Betty Ann	D.C.	Ellis, Frances Howard	Fla.
Bon, David McCulloch	D.C.	Ellis, Elizabeth Jane	N.C.
Breck, John Robert	D.C.	Faxon, Sally Ann	N.C.
Brown, Dennis David	N.J.	Faxon, Raymond	D.C.
Cornell, Douglas Stewart	N.Y.	Favell, Barbara Ann	N.C.
Chavez, Mary Armijo	N.M.	Fiebel, Roland Carmel	D.C.
Cohen, Lillian Minnie	D.C.	Fisher, Edith Graceline	Va.
(With distinction)		Furche, Robert Henry	N.J.
Curtis, Jeanne Marguerite	Md.	Gerhard, Edmund James Joseph	N.J.
Cynthia, Leon	Israel	Gaugert, Patricia Laura	D.C.
D'Amico, Albert J.	D.C.	Gray, George Howard, Jr.	N.Y.
B.S. 1948, American University		Greenwald, Robert Frederick	

Harris, Emmett Watkins	Va.	Rowan, John Carey	Pa.
Hewett, Ellen Nancy	N.Y.	Runk, James Clay	D.C.
Himes, Thelma Christian	D.C.	Sallas, Gustav Adolph	D.C.
Jacobs, Susan Powell, Jr.	Va.	Santor, John Douglas	S.C.
Johnson, William Bowman	Pa.	Schultz, Louis	Va.
Kader, Rita	N.J.	Schreiner, Margaret Abramitis	N.J.
Kanamaok, Barbara Audrey	N.Y.	Schreiner, Margaret	Conn.
Kantrowitz, Gerald	Conn.	Schubert, Virginia Jean	Conn.
Klatzer, Leonard	N.J.	Servais, Raymond Alois	Wis.
Komito, Milton Feldman	Ohio	Shapiro, Laura Leah	N.Y.
La'op, Richard P. - cer	Va.	Simmons, Robert Ellwood	D.C.
Lawson, Howard Berger	Va.	Simms, Shirley Hazen	D.C.
Lentz, Walter Scott, Jr.	Tenn.	Smith, Francis Murphy	N.Y.
Levart, Herman Henry	Mass.	Sobel, Jean Louise	France
Lush, Roberta Creter	Tenn.	Stockton, Lorraine Maley	Tex.
Mandel, Nathan	N.Y.	Stoltz, Nancy Ruth	D.C.
Melton, Howard Watline	Md.	(Special honors in French)	
Merton, Edward Eugene	Neb.	Tolson, Evelyn Hord	D.C.
Martin, Mary Carolyn	D.C.	Tracy, Elizabeth Barbara	Md.
Maurice, Jacqueline Logan	Va.	Tucker, Lucette	Va.
Melton, Margaret Lawrence	Ohio	Vander, Catherine Peter	D.C.
McK. Max, Francis Resdel	Utah	Vander, B. Paula Hollenbacher	D.C.
McKnight, Michael J.	D.C.	Waldstein, David Daniel	N.Y.
Meyer, Henry	N.Y.	West, William Royce	Va.
Mills, Katherine Jayne	D.C.	Westermann, Harland Walter	D.C.
Montague, William Eugene	D.C.	Wiggins, Patricia Ann	D.C.
Mulligan, Robert Albert	R.I.	Winkler, Ralph Ellis	Okla.
Murphy, Elton Ira, Jr.	Tenn.	Winters, Wallace Dudley	N.Y.
Nordholm, Eric Gregg	N.Y.	Wolfe, Eugene Noel	W.Va.
O'Leary, John Francis	Nev.	Wolfe, Douglas Geer	N.Y.
Parker, David Eric, Jr.	Tex.	Zigant, Candace Peter	Minn.
Parmeter, Margaret Anne	Minn.	Zick, Walter Henry	Wis.
Paxon, Nicholas Daniel	Mass.	(With distinction)	
Paul, LeRoy Spencer	D.C.		

MAY 31, 1950

Aberg, William Arvid, Jr.	D.C.	Campbell Ann Elizabeth	Va.
Adams, Josephine Mary	N.Y.	Carothers, Constance Olive	Mass.
Altmeir, Herbert Daniel	D.C.	(Special honors in Religion)	
Amram, Mariana Beulah	D.C.	Caruso, Mollie Jean	N.J.
(With distinction)		Cassidy, Sally Ann	D.C.
Andrews, Marilyn Brownfield	D.C.	Cassidy, Donn Edward	Utah
Ashdown, Katherine Jean	Md.	Cavallo, Guido Anthony	Mass.
Bacon, James Everett, Jr.	Md.	Charest, Helen	N.Y.
Bailey, Wilma Blanche	D.C.	Chore, Nona	D.C.
Balli, Carl Eugene	Fla.	Coe, Anna Hopton	Md.
Baumann, Edward Norman Ralph	N.Y.	Coil, Emory Alfred	Ohio
Beaver, Carol Westbrook	D.C.	Collier, William Edward	Wash.
Becker, Joseph Avula	D.C.	Colot, Evangeline Wilson	Md.
Beckman, Gordon Walter	N.Y.	Conrad, James Calvin	Va.
Bell, Daniel Harry	Va.	Cooke, Robert George	Va.
Bell, Gerald Irwin	N.Y.	Cooper, Leonard Frederick	N.J.
Bennett, Joan Kathleen	Pa.	Courtright, Ann	Md.
Benson, Mendell Tourover	D.C.	Cox, Herman Elmer	S.C.
Biswell, Gloria Moler	Ky.	Cronin, James Joseph	N.Y.
Black, Eleanor Rebecca	D.C.	Crowley, James Worthington	Tenn.
Bolt, Robert	N.Y.	Currier, Wade Richardson	D.C.
Boxie, Elizabeth Jean	Wis.	Danaherty, Mary Barbara	Ind.
Brackett, Lois Anne Wallerstedt	Va.	Davis, David Stanley	Ohio
Brake, Eugene	W.Va.	(With distinction)	
Briller, Shirley Estelle	N.Y.	Davis, Mary	D.C.
Brodhan, Betty Jane	Wis.	Davis, Richard Frantz	Va.
(With distinction)		Dean, Benjamin Franklin	D.C.
Brown, Doris Blandena	N.C.	Delaney, John Alevisious	Mch.
Bruce-Briggs, Florence James	D.C.	Dent, Robert Joseph	D.C.
Burchard, Kathryn Anne	N.J.	Devan, Christopher Bartram	D.C.
Burks, Harold Allen	Ky.	Dallake, Betty Gure	Va.
Bush, Jeremiah Estell	Pa.	Dillenderfer, Anne Lenoir	D.C.
Byrne, James Anthony	N.Y.	Dodson, Elba Aileen	Va.
Bywater, Maurice John	Va.	Dressel, Robert James	D.C.
Caldwell, Margaret	Va.	Dunaway Helen Elizabeth	Iowa

Dunn, Constance June	N.Y.	Hunter, Donald VanOsdal, Jr.	Md.
Dunnington, Elkan Adams, Jr.	Md.	Huntt, Estelle Elizabeth	Md.
Dupuy, Harold James	La.	Johnson, John Sterling	D.C.
Durham, Mary Sherrill	Ky.	Johnstone, James Bryce	Mich.
Dwass, Shirley Labowitz	D.C.	Jungeblut, Edward Wilmont	N.J.
Eisner, Mark, Jr.	N.Y.	Kahn, Cathleen Louise	N.Y.
Ellis, Ruth Joy	Md.	Kamemoto, Fred Isamu	Hawai
Enzor, Thomas Henry, Jr.	Va.	Kay, Harold Henry	Va.
Erenthal, Joseph	N.Y.	Kent, Jack Howard	Fla.
Fackler, Walter David	Minn.	Kim, Grace Moo Kung Wha	Hawai
(With distinction—Special honors in Economics)		King, Pericles	Va.
Falk, Stephen Akley	Conn.	Kissman, Robert Gordon	Md.
Farris, Frederick Joseph	Va.	Kirsten, Sidney Leonard	D.C.
(With distinction)		Klein, Leonard Adam	N.Y.
Farwell, Natalie Anna	N.J.	Koosman, William, Jr.	Minn.
Fausel, Walter Eugene	N.J.	Koplovitz, Rose	Pa.
B.S. 1929, Pennsylvania State College		Kutz, Judith	D.C.
LL.B. 1948, Washington and Lee University		Lapin, Earl Michel	N.Y.
LL.M. 1949, The George Washington University		Layne, Virginia Ellen	D.C.
		Lehner, Richard	N.Y.
Featherstonhaugh, Arthur Cambronne, III	Md.	(With distinction)	
Floyd, Charles Howard	D.C.	Lennan, Alvin Brooks	Md.
(With distinction)		Leslie, Annavee Beverly Faulkner	Md.
Forecum, James Evans	Md.	Levart, Greta Atkin	D.C.
Ford, John Joseph	N.J.	Levin, Irving	N.L.
(Special honors in English)		Limebarger, Louise O'Reilly	D.C.
Fry, Ernest William	Va.	Litz, Paul Robert	D.C.
Fryer, Dorothea Constance	D.C.	Longfellow, Don Woodward	D.C.
Gaines, Robert Wesley, Jr.	Va.	Longyear, Robert Rudston	Mass.
Gannon, William M. Kay	D.C.	Loomis, Maxine Ann	Ill.
Gephardt, Thomas Steuber	Ind.	Lovewell, Suzette	D.C.
Gibbs, Ray Allison, Jr.	Va.	Lundgren, Susanne Stone	D.C.
Gillard, William Henry	D.C.	Lyman, Marjorie Anne	Va.
Gilmour, Robert Andrew	Conn.	MacCormack, Wilfred Raymond	D.C.
Ginselman, Elmer Ann	N.J.	MacDougall, Douglas	N.Y.
Givner, Harry Bernard	D.C.	Machita, Franklin Elliott	D.C.
Gleason, Georgette Elizabeth	N.Y.	Majors, Houston Ledbetter, Jr.	Md.
(With distinction)		March, Christian Lamm, Jr.	N.Y.
Glenn, Rosemary	N.J.	March, Francis Andrew, Jr.	D.C.
Glickman, Louis Harriet	N.J.	Martin, Peter John Calvert	N.Y.
Goldfarb, Louise Marilyn	D.C.	Mason, Gwendolyn Hunsacker	Va.
Gravitz, Melvin A.	D.C.	Massie, Cary Winston	Va.
Gray, Frederick Charles, Jr.	N.Y.	(With distinction)	
Grayson, Sibyl Doris	Va.	Mattison, Arthur Richard, Jr.	D.C.
Griffin, Leonard Lee	Nebr.	Matulis, Florence Frances	N.I.
Griffiths, Mary Cerecia	Va.	McCall, Chester Hayden, Jr.	Md.
(With distinction)		McDowell, Janet Beverly	D.C.
Gritz, Alexander	D.C.	McDowell, Mildred Ann	D.C.
Grodin, Herbert	N.Y.	McLaren, Margaret Campbell	D.C.
Hall, Mary Viola	D.C.	McLynn, James Michael	Md.
Hallman, Pauline Pearl	Va.	McNeel, John Wallace	D.C.
(Special honors in Journalism)		McMullan, Robert Hampton	Ga.
Hansen, Walter Daniel	D.C.	McRory, William Francis	D.C.
Hanson, Jean Lavonne	Wis.	Meier, Sarah Witten	Tex.
Harlan, John Cooper	Va.	Mendenhall, Margaret Harrilyn	D.C.
Harrison, Archibald Chapman, Jr.	D.C.	Meredith, Ellis Elyon	
Harrison, Eleanor Smith	Va.	A.B. 1947, University of Chicago	
Harrison, Elizabeth Toupess	Md.	Messing, Nadia Sebil	N.Y.
Hartley, Jean Doris	D.C.	Michie, James Reginald	Ind.
Haynes, Norma Edith	Va.	Miller, Herbert Junior	Ohio
Head, Almaria	D.C.	Miller, Jean Agnes	D.C.
Hebert, Paul Edmond	Mass.	Miller, Mary	Mass.
Hendershot, Gladys Elaine	Md.	Moise, Rudelev, Jr.	La.
Herwig, Anne Hildegarda	Va.	Monteith, Alice Jean	Va.
Hess, Charlotte Rebecca	D.C.	Morgan, Edward Tull	D.C.
B.S. 1945, Temple University		Morlock, Harry Kenneth	Okla.
Hill, Marjorie Ann	D.C.	Morrison, Mary Margaret	Mass.
Hines, Willamette Patricia	Canal Zone	Murphy, Eleanor Marguerite	Va.
Hines, William Albert	Tenn.	Myers, John Dallas, Jr.	Kans.
Horvath, Leo James	Pa.	Nuttman, Harold Franklin	D.C.
B.S. 1942, Pennsylvania State College		Olshaker, Irving Herman	Md.
		Ormond, William Berkeley	D.C.
		Ostrich, Ralph	

Pad, Thomas Rudolf, Jr.	D.C.	Shinn, Charles Curtis	Md.
Panor, Marie	D.C.	Sieker, Judith Ellen	N.J.
(With distinction)		Silver, Charles B.	N.J.
Parker, Thomas	D.C.	Silver, David Henry	N.Y.
Parkinson, Kenneth Wells	Md.	Simmons, Dorothy Jean	D.C.
Parry, James Davidson	D.C.	Singer, Elaine Betty	N.J.
Pataavas, Con Chris	Ill.	Singman, Julian Howard	D.C.
Payne, Joyce Lee	Va.	(With distinction—Special honors in Economics)	
Pearlman, Belle	D.C.	Sithens, Edward Samuel	Md.
Penningroth, Ann	D.C.	Slattery, Richard Gates	Md.
Perce, LeGrand Winfield, III	Pa.	Slowe, Edward Frederick	Md.
Perna, Louis Robert	D.C.	Smith, Harold Calmes, Jr.	Md.
Peterson, Nad Alma	Utah	Smith, Margaret Anne	D.C.
Piccano, Marie Emile	D.C.	Smookler, Morton Bernard	Del.
Pierce, Jana Marie	D.C.	Snook, Katherine Cosandey	D.C.
Platky, Leon David	D.C.	Solberg, Marcus Ruth	D.C.
Poole, Robert Smallwood	D.C.	Sorenson, Barbara Jeanne	N.Y.
Porro, Ralph Anthony, Jr.	N.Y.	Spruce, Frances Blythe	Md.
Primms, Geraldine Vahl	Va.	Stuka, Sylvia Anita	Md.
Proctor, Lucy Rebecca	Tex.	Stambler, Howard Victor	D.C.
Quenstedt, Warren Daley	D.C.	Starr, Barbara Lee	Va.
Quigg, Barbara Lou	Va.	Stone, Barbara Nell	Va.
Quinn, Mary Elizabeth	Md.	Stoyanoff, Stephen	Pa.
Quinnam, John Wilson	Maine	Strauss, Betty Farber	N.Y.
Ramsay, Gwendolyn Clare	N.Y.	Strawbridge, Lawrence William	D.C.
Rawlings, Joseph Edwin, Jr.	Md.	Stroupe, Ray McKinley, Jr.	Va.
(With distinction)		Summerlin, Virginia Vanderkrift	D.C.
Reid, Alexander Blinn	Va.	Sutsky, Bernard Arthur	Calif.
Reifsnnyder, Sally Ann Evans	Pa.	Talley, Betty Jane	Md.
Ress, Robert Stewart	Va.	Tanner, Seymour William	N.Y.
Reiss, Raymond Howard	Ind.	Taylor, Marvin Elliott	S.C.
Ricketts, Noble George	D.C.	Teagle, Ernest Howard	D.C.
B.S. 1920, United States Coast Guard Academy		Terrell, Jane Kathryn	Conn.
Robbins, Walter Lewis	D.C.	(With distinction)	
Roberts, Beverley Jean	D.C.	Teske, Elaine Theodora	Wa.
Roberts, Mary Martha	Ark.	Thompson, Dorothy Morse	D.C.
Rogers, Charlotte David	Ky.	Thompson, Elizabeth Anne	D.C.
Rogers, Rejinal	Wis.	Thompson, Harry Francis	Wa.
Rose, Herbert Edgar	D.C.	Tuckton, Howard Edwin	D.C.
Ross, Joseph Hunter, III	Md.	Treackle, Hugh Charles	Md.
(Special honors in Art)		B.S. 1921, University of Maryland	
Ross, Ronald McKenzie	D.C.	Trussell, Galen Douglas	Md.
Rowe, Kathleen Wilson	D.C.	Vann, Maurine Elizabeth	Md.
Ruben, Max Samuel	W Va.	Vidal, William	Puerto Rico
Rudy, Lester Eugene	D.C.	Viguera, Edward Edwin	Fla.
Rupert, Mary Martha	Ga.	Vorbach, Charles Frederick	N.J.
Saltz, Ethel Jean Kowan	Md.	Wagshal, Jerome Stanley	D.C.
Salvati, Saverio Ralph	N.Y.	(With distinction)	
Sandmeyer, Melvin Wesley, Jr.	D.C.	Walden, Mary Sanders	Ohio
Sauber, Frank	D.C.	Walsh, Josephine Ann	D.C.
Saville, John William	Md.	Warren, Mary Lowell	D.C.
Schantz, Wilmer Shelly, Jr.	D.C.	Watkins, William Tatum	Fla.
Schram, Dorothy Jean	Va.	Wessell, Robert Glenn	Ill.
Schwartz, Harvete	D.C.	(Special honors in Journalism)	
Scollon, Kenneth Martz	D.C.	White, Horace Walter	Calif.
Sears, Lillian Floyd	Tex.	Whitesel, Patricia Aylward	D.C.
Senchyna, Thomas Joseph	N.Y.	Wiesman, Benjamin	D.C.
Sheppard, William Jacob	Va.	Wulf, Catherine Jean	N.Y.
Sherard, Virginia Mae	Tex.	Wolman, Pearl	D.C.
Sherwin, Herbert David	Mass.	Wygod, Catherine	D.C.
Shettel, Harris Harlan	Pa.	Zasada, Arthur Stephen	Va.

BACHELOR OF SCIENCE

NOVEMBER 11, 1949

Ball, Charles Emmet	D.C.	Cain, George Stepkin	D.C.
Barkin, Gilbert Donald	D.C.	Campbell, Mildred Ann	D.C.
Blechman, Martin George	N.J.	Davis, James Vincent, Jr.	Va.
Brown, Russell Martin, Jr.	Md.	Dragoo, Roland Paul	D.C.
(With distinction)		Edwin, Gabriel	D.C.
Buss, JoAnne Marilyn	Va.	Hornstein, Ida Edith	D.C.

Ingram, Robert Lee	N.C.	O'Brian, Evelyn Kuntz	Iowa
Jass, Andrew Edward	N.Y.	Rosenblum, David Joseph	N.Y.
Kimmel, Vivyan Mary	D.C.	(With distinction)	
Kurtz, Stanley Morton	D.C.	Shapiro, Paul	D.C.
Loomis, Gilbert Brainard, Jr.	N.Y.	(Special honors in Mathematics)	
Miller, Samuel Duncan	Okla.	Sotta, Robert Eugene	Kan.
Norris, Joseph Kieffer	D.C.		

FEBRUARY 22, 1950

Botts, Max Eugene	Ill.	Maloney, William Everett	Mass.
Bushman, John Dale	Ill.	Michael, Irving	D.C.
Cima, Frances Lathrop	D.C.	Orburn, Ernest Eugene	Ga.
Davison, Martin Louis	D.C.	Petty, Richard Alden	Va.
Giegis, James Leon	D.C.	Rothstein, Nathaniel	N.Y.
Hatch, Francis Joseph	Md.	Skelton, Robert T.	N.Y.
Hedger, Richard Henry	Md.	Sower, Arthur	N.J.
Husan, Douglas LeRoy	D.C.	Weinstein, Harvey Harold	D.C.
Mauri, Frank John	Md.	Wings, Deems Norwood	N.C.
A.B. 1943. University of Maine		Yevick, John George	Pa.

MAY 31, 1950

Altszuler, Norman	Conn.	Pancoast, Eunice Billings	D.C.
Bedtoldt, Cletus Joseph	Ill.	Pappas, James Sophocles	Tex.
Briggs, Raymond Westcott, II	D.C.	Parker, John Elliott	N.Y.
Brasie, Loy Hall, Jr.	D.C.	Puzzini, John Vincent	Pa.
Brown, Alice Knowles	Va.	Reeves, Richard Lewis	Va.
Bunker, Grace Isabella	Md.	Roberta, Henry, Jr.	N.J.
Borna, Eugene Joseph	N.J.	Robertson, Wilbert Joseph, Jr.	D.C.
D'Arco, Louis Robert	R.I.	Rozansky, Beverly Ruth	D.C.
Damsherty, Floyd Norton, Jr.	D.C.	Rubay, Jordan Sumner	Mass.
Dreka, Mary Catherine	D.C.	Schaetel, Norman Herman	N.J.
Dunn, Arnold Samuel	N.Y.	Schaeber, Samuel Michael	Mass.
Everett, Franklin Milton	D.C.	Schuman, Larry	N.Y.
Fehles, Francisco, Jr.	Puerto Rico	Shepard, Robert Stanley	D.C.
Fitsh, Charles Thomas	Md.	Singer, Lawrence Robert	D.C.
Gannon, Albert William	N.J.	Spatz, Murray	N.Y.
Hanst, Philip Lincoln	Md.	(With distinction)	
(With distinction)		Steele, Lendell Eugene	N.C.
Johnson, Leslie Addison	Ohio	Sterling, William Norton	D.C.
Korn, Norman	N.Y.	Storkard, Charles Geer	Va.
Lidsky, Martin David	N.Y.	Taylor, Herbert Bradley	Fla.
Lum, David Walker	D.C.	Ward, John Wesley	Tenn.
Mann, Betty Lou	Md.	Weaver, Henry David, Jr.	Va.
Michelitch, Edward	Va.	Weimerad, Richard Herbert	N.Y.
Mohler, John Robbins, II	D.C.	Winston, Anthony	D.C.
Moore, Douglas Hamilton, Jr.	Md.	Zinn, Myron Bernard	N.Y.
Mueller, Peter Klaus	D.C.	(With distinction)	
Naylor, Guy Rodgers, Jr.	Md.		

MASTER OF ARTS

NOVEMBER 11, 1949

Ashmore, Charles DeLoach	Ga.	Falk, Gloria Halpern	N.Y.
A.B. 1938, Harvard University		A.B. 1947, The George Washington University	
Bishop, George Edward	Mass.	Gilford, Leon	N.Y.
A.B. 1944, The George Washington University		A.B. 1950, Brooklyn College	D.C.
Bloom, John Porter	N.M.	Goldberg, Solomon Charles	D.C.
A.B. 1947, University of New Mexico		A.B. 1948, University of Virginia	D.C.
Cohen, Howard Martin	N.Y.	Greenberg, Bernard Louis	
A.B. 1948, The George Washington University		A.B. 1941, Oberlin College	Md.
Faith, Don Carlos	D.C.	Kyrianis, Chris William	
A.B. 1949, The George Washington University		A.B. 1948, The George Washington University	

Degrees Conferred

355

Laney, Arthur Rufus, Jr. A.B. 1947, The George Washington University	D.C.	Rovner, Philip A.B. 1948, The George Washington University	D.C.
Lebergott, Ruth Wellington A.B. 1940, University of Michigan	Mich.	Shapiro, Daniel Murry A.B. 1948, The George Washington University	N.Y.
Licht, Irving Harold A.B. 1942, Ohio University	Ohio	Smith, LeRoy Walter A.B. 1947, American University	Md.
Mastropaolo, Salvatore B.S. in Ed. 1942, College of the City of New York	Va.	Stucke, Adela Leona A.B. 1941, The George Washington University	Tex.
Matthews, Loren Allen A.B. 1948, Union College	Md.	Turner, Marie-Louise Ralph A.B. 1944, The George Washington University	Pa.
Minear, Verna Howard A.B. 1947, University of Denver	Nev.	Van Story, James Cornelius, Jr. A.B. 1948, The George Washington University	D.C.
Moan, Jeanne Corkhill A.B. 1935, Seton Hill College	Pa.		
Pringle, Dorothy Smallwood A.B. 1940, Goucher College	Pa.		
Rose, Jeanne A.B. 1933, College of William and Mary	Md.		

FEBRUARY 22, 1950

Anthony, James Nicholas A.B. 1948, The Citadel	S.C.	Leahy, William Vincent Crahan A.B. 1944, University of Pennsylvania	Vt.
Bibolt, Roland Henry A.B. 1942, University of Arizona	Ariz.	Lewis, James William A.B. 1933, Maryville College, Tennessee	D.C.
Faison, Edmund Winston Jordan A.B. 1948, The George Washington University	N.C.	Noren, Morris Keith A.B. 1948, University of Oregon	Oreg.
Freeman, Rhoda Golden A.B. 1948, Hunter College	N.Y.	Parry, Eleanor Elizabeth A.B. 1941, Taylor University	D.C.
Goldstein, Daniel B.S. 1948, University of Baltimore	Md.	Rauch, Arthur S. A.B. 1947, The George Washington University	D.C.
Green, Ann Ralston B.S. 1945, Wilson Teachers College	D.C.	Russler, William B.S. 1942, College of the City of New York	N.Y.
Hutton, Daniel Cogdell A.B. 1947, University of Utah	Va.	Thurston, Virginia Sweeney A.B. 1925, West Virginia University	W.Va.
Jacobs, Milton A.B. 1948, The George Washington University	Pa.	Toomey, William Joseph A.B. 1928, A.M. 1930, St. Louis University	D.C.
Johnson Peter Herbert A.B. 1948, The George Washington University	Miss.	Voelpel, Jack Clare A.B. 1948, The George Washington University	D.C.
Jones, Ruth Elsie A.B. 1940, Baylor University	Tex.		
Krehbiel, Mary Lou A.B. 1946, The George Washington University	Ohio		

MAY 31, 1950

Addison, Kathryn Eloise A.B. 1937, University of Illinois	Ill.	Burdsall, Lorna Nell A.B. 1949, The George Washington University	Conn.
Baroff, George Stanley B.S. 1948, The George Washington University	N.Y.	Dinsmore, Ruth Ann B.S. 1940, State Teachers College, Worcester, Mass.	Mass.
Baruch, Maurice Jacques B.S. 1935, College of the City of New York	N.Y.	Dunn, Theodore Franklin A.B. 1948, The George Washington University	N.Y.
Bates, Frederick LeRoy A.B. 1949, The George Washington University	Va.	Fichandler, Zelda Diamond A.B. 1945, Cornell University	D.C.
Blankenheimer, Bernard A.B. 1941, Brooklyn College	N.Y.	Hazur, Paul John A.B. 1948, The George Washington University	Va.
Brooks, Joseph James B.S. 1946, Purdue University	D.C.	Jaffe, Irving Stanley A.B. 1945, University of Michigan	N.Y.
Brown, Stanley Wayne A.B. 1949, Ohio State University	Ohio		

King, James Cecil A.B. 1949, The George Washington University	Pa.	Robbins, Chandler Seymour A.B. 1940, Harvard University	Md.
Kupperman, Morton P. B.S. 1918, College of the City of New York	N.Y.	Ruark, James Clay A.B. 1960, The George Washington University	D.C.
Macpherson, Alan Campbell B.S. 1947, University of Maryland	Va.	Simpson, Roxie Collie A.B. 1932, Meredith College	N.C.
Matheson, John Douglas B.S. 1913, United States Military Academy	Mont.	Snodgrass, Ann Browning A.B. 1930, Smith College	D.C.
Myerson, Jacob Myer A.B. 1940, The George Washington University	D.C.	Sowards, Leona Noel A.B. 1947, Municipal University of Wichita	D.C.
Nahm, Doris A.B. 1949, The George Washington University	Md.	Stelck, William Ardell A.B. 1949, Drake University	Iowa
Nowak, Leopoldina Antonie A.B. 1947, The George Washington University	Ill.	Stibravy, Lois Elaine A.B. 1942, The George Washington University	N.J.
O'Brien, Tatiana Boses A.B. 1946, The George Washington University	D.C.	Toompas, Charles Arthur A.B. 1918, University of West Virginia	W.Va.
Ritchey, Mary Ruth A.B. 1947, Mount Holyoke College	Pa.	Wrong, Elizabeth June A.B. 1947, University of Toronto	Canada

MASTER OF SCIENCE

NOVEMBER 11, 1949

Abboet, Robert Tucker B.S. 1946, Harvard University	Va.	Krivoy, William Aaron B.S. 1948, Georgetown University	D.C.
Bacchus, Azeez B.S. 1947, Howard University	British Guiana	McCarron, John Daniel B.S. 1948, Georgetown University	N.J.
Berman, Harold John B.S. 1948, Georgetown University	D.C.	McCarten, William G. B.S. 1945, University of New Hampshire	N.H.
Bourke, Anne Rosaleen B.S. 1937, University of Maryland	Md.	Miller, Caroline Parkinson B.S. 1947, The George Washington University	D.C.
Brinks, Walter Joseph B.S. 1943, Georgetown University	D.C.	Modlin, Albert Jay B.S. 1948, The George Washington University	D.C.
Cammer, Margaret Ann B.S. 1948, The George Washington University	Va.	Ross, Marian Elizabeth A.B. 1945, Trinity College	Conn.
DeKornfeld, Thomas J. B.S. 1948, The George Washington University	Md.	Wiggins, Thomas Arthur B.S. 1942, Pennsylvania State College	Pa.
Gordon, Howard Leo B.S. 1948, Georgetown University	D.C.	Willson, John Tucker B.S. 1948, The George Washington University	Colo.
Haggart, Jane B.S. 1949, The George Washington University	D.C.		

FEBRUARY 22, 1950

Aarons, Isadore Alfred B.S. 1933, University of Chicago	Ga.	Kelb, Robert Warren B.S. 1941, University of Maryland	Md.
Beeman, Jean Superstein A.B. 1946, University of Richmond	Md.	Kramer, Norman Clifford B.S. 1948, The Citadel	N.Y.
Bernstein, Charles Nathaniel B.S. 1940, College of the City of New York	N.Y.	Hui-Chen, Lu B.S. 1943, Cheeloo University, Shantung, China	China
Carson, Arthur Nicole B.S. 1944, California Institute of Technology	D.C.	Solow, Max B.E.E. 1949, The George Washington University	Md.
Einheber, Albert A.B. 1948, The George Washington University	Pa.	Throne, Junior Arthur B.S. 1950, Milwaukee Teachers College	Md.

MAY 31, 1950

Brownson, Robert Henry B.S. 1948, John Carroll University	Va.	Meyer, Myrtle Isabelle B.S. 1942, Rhode Island State College	D.C.
Laney, Culbert B.S. 1941, Utah State Agricultural College	Md.	Munan, Louis A.B. 1948, The George Washington University	N.Y.
Liang, Maria Mu-Lian M.D. 1942, Medical School of National Sun Yat Sen University	N.Y.	Stopak, Jacob Henry B.S. 1940, Georgetown University	D.C.

THE SCHOOL OF MEDICINE

DOCTOR OF MEDICINE

MAY 31, 1950

Abraham, Abe Samuel B.S. 1938, Westminster College	Calif.	Gillman, Robert David A.B. 1939, B.Mus. 1940, Yale University	D.C.
Avery, John Lawrence B.S. 1937, University of Maryland	D.C.	A.M. 1946, Columbia University	Va.
M.S. 1939, The George Washington University		Green, Jess Downing, Jr. A.B. 1944, University of Kansas City	N.Y.
Aye, Ralph Claxton B.S. 1940, M.S. 1941, Northwestern University	Ill.	Guerin, Bernard B.S. 1944, Louisiana State University	
Barefoot, Julius Jackson B.S. 1948, University of Cincinnati	N.C.	M.S. 1946, The George Washington University	
Barefoot, Verna Young B.S. 1945, University of Chicago	N.C.	Hambv, Alice Waters A.B. 1941, Transylvania University	Ky.
Barila, Timothy George Barnett, Mary Helen McConnell A.B. 1947, The George Washington University	N.M. D.C.	Halsup, Allen Lee Holworth, Dorothy Catherine A.B. 1944, Notre Dame College A.M. 1946, Catholic University of America	Fla. Md.
Boyer, Delos White Bristow, John Wesley Broadstreet, Henry Thomas, Jr. B.S. 1945, University of Florida	D.C. Calif. Fla.	Horn, Henry Joseph B.S. in B.E. 1941, Lehigh University	Pa. W.Va.
Brooks, Harrison Morton, Jr. B.S. 1940, Wheaton College	Pa.	Hughes, Francis Homer, Jr. B.S. 1946, Salem College	Md.
Bruce, Clayton Roy B.S. 1946, University of Pittsburgh	Pa.	Kayhoe, Donald Ellsworth A.B. 1948, The George Washington University	
Carnes, Raymond Eugene A.B. 1947, The George Washington University	Md.	Kent, Stephen Garland, Jr. Keshishian, John Mark Knox, Robert Ormiston, Jr. A.B. 1947, The George Washington University	Va. Md. D.C.
Cohen, George Joel Connor, Audrey Marie A.B. 1945, Trinity College	D.C. D.C.	Kolb, Karl Philip Leckie, Jack B.S. 1938, Marshall College	Wis. W.Va.
Connor, Joseph Daniel Dalton, Charles Edward DiBenedetto, Anthony Domenico B.S. 1943, Villanova College	Md. Kans. N.Y.	Littwin, Charles Stuart A.B. 1941, Hobart College	N.J.
Doran, Stephen Mark Erickson, Robert Lyle Everding, Charles Hess Jerome Fabi, Mario Nestor Files, George Everett B.S. 1941, Tufts College	Mich. Minn. N.Y. Pa. Mass.	Maffey, Ralph Burton B.S. 1943, Rutgers University Magness, John Lower (With distinction) Mandes, James Charles A.B. 1947, The George Washington University	N.J. Ohio D.C.
Funt, Tobias Roger A.B. 1948, University of Missouri	Mo.	Martin, Dean Harrington McKelway, William Prentiss (With distinction) A.B. 1943, Washington and Lee University	Md. D.C.
Garnett, James Harper Poor A.B. 1947, University of Virginia	D.C.		
George, Harry Clair B.S. 1944, Mount Union College	Ohio		
Gibson, James Wallace B.S. 1941, Hampden-Sydney College	Va.	Metzger, Joseph Francis Morris, Douglas Cokerille	Md. Va.
Gillette, Warren B.S. 1942, California Institute of Technology	Calif.	Mott, Richard Henry, Jr. A.B. 1947, The George Washington University	D.C.

Naiden, Eulsaine (With distinction) B.S. 1942, University of Idaho	Va.	Switzer, Walter Edwin Ed.B. 1940, Illinois State Normal School	Ill.
Nelson, Donald Sell	D.C.	M.S. 1941, University of Illinois	
Oftedal, Sverre John	D.C.	Thibadeau, Andrew Frank A.B. 1948, The George Washington University	Md.
Parish, Matthew Denwood	Va.	Trible, William MacLohon A.B. 1943, Princeton University	D.C.
P.B. 1939, University of Virginia	R.I.	Upton, Emily Frances B.S. 1942, University of Maryland	Md.
Pauli, Alton Morton	Colo.	Varvaressos, Yvonne Honour Mod. Nat. Science 1946, Oxford University	D.C.
Pear, Bertram Lincoln A.B. 1947, The George Washington University	Honduras	Waldron, Francis Neil (With distinction) A.B. 1946, University of Minnesota	Md.
Reyes M., Raul Gregorio B.S. 1946, Georgetown University	N.Y.	Walter, Katharine Miriam B.S. 1944, The George Washington University	Md.
Rhame, Harold Ellis, Jr. (With distinction) A.B. 1946, Princeton University	Idaho	Weaver, Frank Lloyd, Jr. A.B. 1947, The George Washington University	Hawaii N.Y.
Robertson, Jack Rodney	Wash.	Willett, Edwin Dexter Winter, Frank Ephraim B.S. 1943, University of Pittsburgh	D.C.
Rock, Herman Henry B.S. 1942, Washington State College	D.C.	Wood, Edwin Charles (With distinction) Yanowitz, Arthur	N.Y.
Rubenstein, Norman Hartley	Md.		
Savarese, Charles Joseph, Jr. A.B. 1941, University of North Carolina	Mont.		
Schmidt, Donald Gerry B.S. 1942, University of Washington	N.Y.		
Seborer, Miriam Z. (With distinction) A.B. 1939, Hunter College	N.Y.		
A.M. 1940, Columbia University			
Stein, Harold Lawson A.B. 1947, The George Washington University			

THE LAW SCHOOL

BACHELOR OF LAWS

NOVEMBER 11, 1949

Aiken, William David	Wash.	Dibner, Richard Eugene B.M.E. 1941, College of the City of New York	N.Y.
Anton, Alfred John A.B. 1948, University of Missouri	Va.	Doane, John Emil B.E.E. 1946, The George Washington University	Md.
Apgar, Harry Emmanuel, Jr. A.B. 1948, Lafayette College	Va.	Donelson, Kenneth William Downs, Harold Alfred	Nebr.
Archer, Cnut Alexander	Miss.	Earle, John Howard B.S. 1943, Pennsylvania State College	D.C.
Avancena, Manuel Claude	D.C.	Egley, Paul Wesley A.B. 1946, University of California at Los Angeles	Calif.
Bathory, Joseph Patrick	Ill.	Fair, Robert James A.B. 1947, The George Washington University	Ind.
Baumgarten, Stephen Harvey	N.Y.	Falloon, James Hugh, Jr. A.B. 1948, The George Washington University	Nebr.
Beall, John Norman, Jr.	D.C.	Fanget, Louis Alfred A.B. 1949, Rutgers University	N.J.
Bennet, Joseph Andrew	Ohio	Feldman, Melvin Martin Filippone, Frank Joseph	D.C.
Bodgett, Norman Stack B.S. 1941, Worcester Polytechnic Institute	Va.	Flanders, Robert Lee A.B. 1947, The George Washington University	Md.
Bortner, Jeffrey Clair	D.C.	Fleming, Lester Leroy Forman, Edward A.B. 1943, College of the City of New York	Pa.
Bradley, William Orlando	Nev.	Fox, Dorothy Schwartz A.B. 1947, The George Washington University	N.Y.
Bomer, Charles Theodore, Jr. A.B. 1947, Cornell University	Va.		Ohio
Burns, Walter William, Jr. B.E.E. 1943, Cornell University	N.Y.		
Carter, Harold Martin B.S. 1942, Roanoke College	Va.		
Cope, Harland Burleigh A.B. 1946, University of Kansas	Kans.		
Davis, Sadye Jane A.B. 1947, The George Washington University	Pa.		
DeBlasis, Samuel J. DeRosa, Edward Francis A.B. 1947, The George Washington University	Ohio		
	Mass.		

Gabletsa, Mary Jane	N.H.	Morrison, William Llewelyn	N.J.
A.B. 1947, Wellesley College		B.S. 1939, United States Coast Guard Academy	
Gemza, Theodore Anthony	Conn.	Nevin, John Irving, Jr.	N.Y.
Gingell, Robert Arthur	Md.	Nichols, Louis N.	D.C.
A.B. 1948, The George Washington University		O'Flaherty, Daniel Fairfax	Va.
Gordon, Herbert Stephan	Ind.	Palmer, Lowell Richard	Va.
A.B. 1947, Indiana University		Parker, O. B.	Md.
Gottshall, William Holt	D.C.	Pickering, Leonard Leroy	Okla.
A.B. 1948, Allegheny College		Ratner, Max	D.C.
Grier, Harold Thomas	D.C.	Reynolds, Gary Stewart	N.Y.
Harper, Richard Howard	W.Va.	Riley, Jeremiah Thomas	Mont.
Hart, Seward Lyman	S.D.	Roberts, John Summerfield, Jr.	Va.
A.B. 1938, Yankton College		B.S. 1941, University of Virginia	
Haskell, Boris	Mass.	Romero, Theodore Robert	Md.
A.B. 1943, Harvard University		Rosenberg, Seymour Morton	N.Y.
Herrick, Harold Colton III	Mo.	(With distinction)	
B.S. in E.E. 1937, B.S. in Eng. Adm. 1938, Washington University		B.E.E. 1940, College of the City of New York	
Houseal, Robert Wright, Jr.	S.C.	Sadur, Marvin Philip	D.C.
B.S. 1943, The Citadel		A.B. 1947, The George Washington University	
Hoyt, John Gregory	D.C.	Sander, Dora	Md.
B.S. 1943, United States Military Academy		A.B. 1942, Radcliffe College	
Jackson, Philip Grant	Iowa	Scariot, Angelo John	Va.
Jacobson, Odd Thomas	N.D.	A.B. 1948, The George Washington University	
A.B. 1948, The George Washington University		Sheridan, Philip Henry	D.C.
Jernberg, Dale Leonard	Md.	B.S. in E.E. 1944, Worcester Polytechnic Institute	
Jones, Jack Clayton	Okla.	Smith, Thomas Warner	D.C.
B.S. in Ch.E. 1939, Oklahoma Agricultural and Mechanical College		A.B. 1948, The George Washington University	
Kellison, John Ray	Va.	Steenerson, Palmer Seymour	D.C.
B.S. 1941, University of Richmond		Steinmeyer, Robert Jay	D.C.
Kelly, Edward Joseph	Pa.	B.S. in E.E. 1943, University of Nebraska	
B.S. in Ch.E. 1939, Drexel Institute of Technology		Stetson, Rufus Edwin, Jr.	Maine
Kohlso, Frederick Henry	Md.	A.B. 1947, Bowdoin College	
B.S. in M.E. 1943, University of Maryland		Stewart, David Alfred, Jr.	Mass.
Kopp, Paul Joseph	Va.	Stuart, Jasper Edwin	D.C.
A.B. 1932, Lehigh University		Sussholz, Leonard B.	N.Y.
A.M. 1933, Duke University		A.B. 1948, The George Washington University	
Lanormarino, Paul Donald	Ill.	Tavener, Frank Brennan	Va.
A.B. 1948, University of Iowa		Taylor, Harry Earl, Jr.	Md.
Leary, Robert George	N.Y.	A.B. 1948, The George Washington University	
Lindberg, Dale Sheldon	D.C.	Thornley, Robert Miller	D.C.
A.B. 1943, Bucknell University		Threadgill, William James	Mass.
Lokke, Bernard Molineaux	N.Y.	A.B. 1947, University of Mississippi	
MacMillan John Howard	Md.	Townsend, Robert Arnold	Va.
Mahar, Daniel John, Jr.	N.Y.	A.B. 1943, Harvard University	
Maher, Francis Patrick	Tex.	Umstead, Lyman John	Pa.
Maltman, William Leneave	Oreg.	A.B. 1948, The George Washington University	
B.S. 1943, University of Oregon		Vaccaro, Camillo Jimmie, Jr.	D.C.
Markowitz, Irving	N.J.	Wagman, Theodore David	Mass.
Maves, Basil Lamar	Calif.	A.B. 1939, A.M. 1940, Boston University	
McDonough, Russell Charles	Mont.	Walker, Dale Bryan, Jr.	N.M.
McQueen, Robert Keith	Iowa	Watkins, William Henry	D.C.
A.B. 1944, The George Washington University		B.S. in E.E. 1940, University of Maryland	
Melvin, Flavell Bryan, Jr.	Va.	Wavland, Clarence Raymond	Va.
Mendelsohn, Sydney Henry	Pa.	Whitwell, Sanford McCallum	Pa.
Meyers, Leonard Bernard	D.C.	B.S. in M.E. 1944, Cornell University	
Mileur, Alfred Donald	Okla.	Williams, John Charles	N.D.
Miller, Herbert John, Jr.	D.C.	Williams, Leonard John II	Md.
A.B. 1948, The George Washington University		Young, Maynard Elting	W.Va.
Miller, Robert Preston	N.Y.	B.S. 1937, United States Coast Guard Academy	
B.S. in M.E. 1943, Cornell University		Zaskalucky, Julius John	Conn.
Moore, Charles Clifton, Jr.	D.C.	B.E. 1942, Yale University	
Moore, Waldo Hawthorne	Va.		
Morgan, Don Earle	Ky.		

FEBRUARY 22, 1950

Alawine, Alton Jackson	Miss.	Gifford, Yale Wesley	Kans.
Artman, Herbert Edward	Ohio	A.B. 1947, The George Washington University	
Aronson, Sylvan Bernard	D.C.	Goren, Howard J.	Md.
Atkinson, Charles Fred	Ohio	Graybeal, John Olin	Wash.
A.B. 1948, The George Washington University		B.S. 1943, College of Puget Sound	
Baldrige, Reid	D.C.	Green, Samuel	D.C.
A.B. 1948, The George Washington University		A.B. 1948, The George Washington University	
Baskin, William Maxwell	Va.	Gregg, James Calvin	Pa.
Beebe, William Bovell	D.C.	Grove, Jesse Barrett, Jr.	Va.
A.B. in Govt. 1946, The George Washington University		B.S. 1939, Virginia Polytechnic Institute	
Booton, Robert Edward	Iowa	Grubb, Stephen F.	Nebr.
Bramow, Alvin	D.C.	Hamby, John Gordon	Ky.
Bristol, Ethel Cleo	Colo.	B.S. in M.E. 1947, University of Kentucky	
Brown, Herman Cabbage	Del.	Healey, Alan John	D.C.
A.B. 1948, University of North Carolina		A.B. 1948, The George Washington University	
Camby, John Joseph	Pa.	Helzer, Charles William	Fla.
B.S. 1941, Carnegie Institute of Technology		B.S. in E.E. 1945, Georgia Institute of Technology	
Cameron, William Kimmel	Ohio	Hillman, Jack Allan	D.C.
A.B. 1948, The George Washington University		Holbrook, Olin James	Ky.
Christopherson, Olaf Warren	Minn.	Isom, Clifford Chnton	Ill.
A.B. 1946, The George Washington University		B.S. 1939, Kansas State College	
Church, Abiah Adelbert	Fla.	Jackson, Thomas Lester	Md.
A.B. 1948, The George Washington University		Johnson, Norton Steele	Md.
Coleman, Carl Shaughnessy	Tenn.	Jones, Cullen Bryant, Jr.	Ind.
Cook, Rae Timmins	Pa.	A.B. 1948, The George Washington University	
B.S.C. 1940, Temple University		Jordan, George Sanford	D.C.
Cooke, David Ohlmer	N.Y.	Julien, Carl Alden	Oreg.
B.S. 1941, M.S. 1942, New York State College for Teachers, Buffalo		B.S. 1945, University of Washington	
Cregger, Hugh Cassell, Jr.	W.Va.	M.S. 1947, University of Notre Dame	Md.
Crewe, William Penn	Md.	Kahn, Fritz Reiner	
Daniel, William Jeffress	N.C.	A.B. 1948, The George Washington University	D.C.
B.Ch.E. 1947, North Carolina State College		Kayson, David	N.J.
DePaul, Joseph Alfred	Md.	Kerr, Thomas Moore, Jr.	Mass.
Donnelly, William James, Jr.	Md.	A.B. 1940, Lafayette College	
Dougherty, Frank Robert	Md.	Kitta, Willard Frederick	N.H.
A.B. 1946, The George Washington University		A.B. 1942, Amherst College	
Dowell, Earl Simeon	Ill.	Kokulis, Paul Nicholas	
B.S. 1947, University of Illinois		B.S. 1944, Worcester Polytechnic Institute	
Dwyer, John Joseph	D.C.	Korn, Seymour	N.Y.
A.B. 1948, The George Washington University		Krist, Fred George	N.Y.
Ferrill, Grace Cecelia	R.I.	Kytile, Stuart Frederick	Md.
A.B. 1948, The George Washington University		A.B. 1948, The George Washington University	
Frank, Robert Berliner	D.C.	Lang, Edward Alexander	Fla.
A.B. 1940, University of North Carolina		B.S. 1943, University of Florida	
Fratt, Nicholas Diller III	D.C.	Lephram, George Sealy, Jr.	Ga.
Fredericks, Ilet Henry	Okla.	Lerner, Theodore Nathan	D.C.
Freeman, Robert M.	N.Y.	Liken, Robert Lee	Okla.
B.E.E. 1944, The College of the City of New York		Lindamood, Joseph Ganam, Jr.	Md.
Friedman, Sol	Md.	A.B. 1943, The University of Maryland	Va.
Furst, Howard Irving	Va.	Lucas, Charles William	Conn.
A.B. 1943, University of California at Los Angeles		Lynch, William Charles	D.C.
Futoran, Josef	Va.	Mann, Donegan	
B.S. 1935, M.S. 1936, The College of the City of New York		A.B. 1947, The George Washington University	Pa.
		Martini, Anthony Francis	
		A.B. 1948, The George Washington University	W.Va.
		McGinnis, Robert Allen	Va.
		McIntyre, Fred Louis	
		A.B. 1948, The George Washington University	

McKeel, Charles Baynor III	N.C.	Steiner, Paul Llewyn	D.C.
Milfelt, William Benjamin	Mo.	Stewart, Francis John	Pa.
Mullin, Eugene Francis, Jr.	D.C.	A.B. 1948, West Virginia University	
A.B. 1945, Brown University		Stiles, Meredith Newcomb, Jr.	N.J.
Musselman, Ashby Milton, Jr.	D.C.	A.B. 1946, Amherst College	
B.S. 1947, University of Maryland		Sukalo, Charles	N.J.
Newmyer, Armand	D.C.	B.S. in Ch.E. 1944, Newark College	
Nolte, Carl Robert, Jr.	D.C.	of Engineering	
A.B. 1948, College of William and		Sullivan, Arthur Victor, Jr.	D.C.
Mary		Tait, Reid Clifford	Md.
O'Brian, Edward Day	Iowa	Taylor, Edward Rathben	D.C.
B.S. 1947, Iowa State College		A.B. 1947, Lafayette College	
Oda, Robert Yasuo	Hawaii	Thurmond, Cornelius Brooks, Jr.	Ga.
Osann, Robert	Va.	Travaglini, Vincent D.	Va.
B.Ch.E. 1943, Rensselaer Polytechnic		Turkal, Donald Lloyd	Md.
Institute		Vinciguerra, John Vincent	Ohio
Parrish, John Poindexter	Va.	A.B. 1940, University of Akron	
Paulson, Norman Clarence	S.D.	Vitale, Michael Joseph	N.J.
Pfeiffer, Frederick Thompson	D.C.	Weaver, Gilbert Earl, Jr.	N.C.
A.B. 1947, University of North		A.B. 1948, Lenox-Rhyme College	
Carolina		Weed, Norman Broadwell	D.C.
Pollack, Leonard Herman	Pa.	A.B. 1938, Stanford University	
Poston, Raymond Lee, Jr.	Va.	Whitaker, Edward Stephen	Tenn.
Reagan, James Edwin	D.C.	A.B. 1942, King College	
Rhine, Mary Elizabeth	Pa.	White, Robert Lynn	W.Va.
Richards, William Robert	Md.	B.S. 1947, Marietta College	
Ridpath, Robert Vance	Ind.	Wicker, George Stanley	Ga.
Rommel, Wilfred Herzer	D.C.	A.B. 1939, Emory University	
B.S. 1937, North Dakota State College		Widman, Charles Louis	D.C.
Rosenthal, Alan Henry	D.C.	Wing, Robert Claude	Maine
Sakai, Hiroshi	Hawaii	B.S. 1935, United States Naval	
Schneider, Walter Henry	N.J.	Academy	
B.S. 1943, Virginia Polytechnic		M.B.A. 1939, Harvard University	
Institute		Withers, John Lewis	N.C.
Shapiro, David	N.Y.	B.S. 1940, Davidson College	
Sharp, Daniel DeWitt	Mass.	A.M. 1941, University of North	
B.S. 1939, Northeastern University		Carolina	
Sheff, Irving Hyman	Mass.	Wolk, Reuben	Calif.
A.B. 1948, The George Washington		B.S. 1938, University of Maryland	
University		Yokley, William Ross, Jr.	Pa.
Smith, Dudley Burcham	Oreg.		
B.S. 1945, California Institute of			
Technology			

MAY 31, 1950

Atkinson, Ethel Kathleen	Ohio	Blake, George Francis	Md.
B.S. 1928, Carnegie Institute of		Blake, Martin	D.C.
Technology		B.S. 1927, Northeastern University	
A.M. 1940, Western Reserve University		Blatchford, Walter Larned	Tex.
Ayers, Theodore Aley	Va.	B.S. 1911, United States Naval	
A.B. 1941, University of Virginia		Academy	
Bain, Cody	Okla.	Bock, Eugene William	N.Y.
Barish, Benjamin J.	Mich.	B.S. 1948, Texas Christian University	
B.S. in E.E. 1946, Illinois Institute		Brantley, James Cranford	D.C.
of Technology		B.B.A. 1947, University of Georgia	
Barnes, Duard Roof	Ariz.	Brewster, Mary Sanford	Va.
A.B. 1949, The George Washington		Brill, Edward Pope, Jr.	Md.
University		Bundock, John Paul David, Jr.	D.C.
Bauknight, William Cooper, Jr.	Va.	B.S. in E.E. 1948, Tufts College	
B.S. 1942, University of Virginia		Bush, Joseph Francis	D.C.
Becker, Martin Stanley	D.C.	B.S. 1947, Mount St. Mary's College	
Beckwith, Thomas Larson, Jr.	N.J.	Button, Dale Leon	Kans.
Bell, Edward Leroy	Ohio	Caldwell, Randolph Foster, Jr.	Tenn.
B.S. 1946, Illinois Institute of		Cantwell, William James	N.Y.
Technology		A.B. 1948, The George Washington	
Bell, Jay Richard	Utah	University	
Benson, Jacques Marie	Utah	Carter, Sidney	N.Y.
B.S. 1947, Utah State University		B.C.E. 1943, College of the City of	
Biram, James Raymond	Conn.	New York	
B.E. 1948, Yale University			

Caruso, Lawrence Robert	N.J.	Harmon, Robert Brooks	Md.
A.B. 1949, The George Washington University		B.S. 1941, University of Maryland	
Cherwick, Stanley	Mass.	Hattis, Russell Elmer	Ill.
A.B. 1949, The George Washington University		B.S. in E.E. 1947, University of Illinois	
Cheslow, Ernest	N.Y.	Hendershott, Susan Jane	Md.
B.C.E. 1939, College of the City of New York		Hiers, Jasper Theodore III	N.C.
Chudzik, John Stephen	N.Y.	Hill, William Bethel, Jr.	Va.
A.B. 1948, The George Washington University		B.S.C. 1941, University of Virginia	
Cochran, Robert Reid	N.J.	Holford, Bond Larry	Md.
B.S. in C.E. 1947, Tufts College		Hollingsworth, Gerald Eugene	Md.
Cohen, Saul Benjamin	D.C.	Houston, James Knox	D.C.
A.B. 1949, The George Washington University		Hutchinson, Fileen Marie	Ohio
Compton, Ross Harrington	Va.	Janson, Lars Edward	Va.
B.S. 1947, Massachusetts Institute of Technology		A.B. 1948, The George Washington University	
Crammond, James Darwin	D.C.	Johnson, Leighton Eugene	Minn.
Crane, Esther Sibyl	N.M.	A.B. 1948, The George Washington University	
(With distinction)		Johnson, Richard Carl	Md.
A.B. 1949, The George Washington University		Jones, Darrell Lloyd	Tex.
Curry, Stowers Leigh, Jr.	Va.	Kaiser, Stanley Mortimer	D.C.
A.B. 1948, The George Washington University		Kalb, Vernon Fredric	Ky.
Day, Ernest Herbert	Ohio	B.S. 1947, University of Kentucky	D.C.
A.B. 1941, Oberlin College		Kappler, Charles Theodore	
Dickson, James Meek	S.C.	A.B. 1942, Yale University	Mich.
Dixon, William Joseph	Md.	Keller, Frank William	Md.
Dowell, Arthur Edward III	D.C.	Kemer, Frank Conrad	
B.S. in E.E. 1943, Princeton University		A.B. 1949, The George Washington University	
Downing, Leslie Burgess	Va.	Kirshbaum, Amiel	D.C.
B.S. 1948, United States Military Academy		B.S. 1937, University of Maryland	D.C.
Dumaine, Gabriel Romain	Va.	Klavan, Stanley	Ill.
A.B. 1948, The George Washington University		Klostermann, Wolfgang Ekart	D.C.
Elliott, William Homer, Jr.	N.J.	Kolodny, Joseph George	
A.B. 1948, Wesleyan University		Kornblatt, Julius	N.Y.
Engelthaler, Fred Edward	Ill.	Koutoulakos, Louis	Va.
B.S. 1938, Illinois Institute of Technology		A.B. 1949, The George Washington University	
Favarella, Euglie Paul	Pa.	Kozlowski, Joseph John	Ill.
Foley, James Kieran	N.Y.	Lainof, Robert Ivan	Va.
B.S. 1945, United States Merchant Marine Academy		B.S. 1949, North Carolina State College	
French, William Thomas	Fla.	Lavine, Irvin Arthur	Md.
B.C.E. 1933, University of Florida		B.A.E. 1947, Catholic University of America	Mich.
Fried, Alfred Susmund	Md.	LeVine, Carl Ralph	
Galan, Morton Robert	N.Y.	B.S.E. 1936, M.S.E. 1938, University of Michigan	Md.
B.E.E. 1946, College of the City of New York		Levy, Donald	Wis.
Ginsberg, Albert	Md.	B.S. 1947, University of Maryland	
Goewan, Bruce Anderson	Mass.	Loomis, Jerome Lathrop	
A.B. 1942, Colgate University		Ed.B. 1935, Wisconsin State Teachers College, Whitewater	
Goldstein, Benjamin	N.Y.	A.M. 1942, Northwestern University	Philippines
B.S.S. 1931, M.B.A. 1932, College of the City of New York		Lopez, Cornelio Orsal	
Gourley, Roy George	Pa.	A.B. 1927, University of Iowa	Md.
B.S. 1948, University of Alabama		Mack, John Halford	
Gray, Daniel William	Mass.	B.S. 1937, University of New Hampshire	Ky.
Hall, Joseph Earl	W.Va.	Manning, Charles Madison	Md.
A.B. 1939, Marshall College		A.B. 1947, Union College	
Halther, Elnor Van, Jr.	Fla.	B.S. 1937, College of the City of New York	Va.
A.B. 1942, University of Florida		Martin, Marshall Alden, Jr.	Va.
Hancock, Quinlan Harris	Va.	Martin, Watt Nicholas	Wis.
Handy, John Bruce, Jr.	D.C.	Missey, Edward Gabriel	
A.B. 1943, Washington and Lee University		A.B. 1942, A.M. 1945, University of Wisconsin	

Moore, Jack Martin A.B. 1949, The George Washington University	Md.	Rutledge, John Sathiz, Abraham Alan A.B. 1946, Cornell University	Va. N.Y.
Muller, Raymond Carl B.S. 1949, University of Maryland	Md.	Schappert, Joseph Matthew, Jr. A.B. 1948, Queens College	N.Y.
Mullinnix, Allen Prather B.S. 1949, United States Naval Academy	D.C.	Schultz, Edward Karl Schonberger, Eugene Schultz, Herman David Sheeran, James Joseph Sheridan, Philip Revis A.B. 1948, The George Washington University	Nebr. Va. N.Y. N.J. Pa.
Murray, Everett Clark A.B. 1947, Harvard University	Ohio	Shoemaker, William Robert Shoup, Wilson Elliott A.B. 1937, Indiana University	Ala. Va.
Norvell, Robert Joseph B.S. 1947, University of Wisconsin	Va.	Silverman, Aaron A.B. 1948, The George Washington University	D.C.
Novakovich, Nada O'Dea, Thomas Emmett Odza, Hugh Malcolm A.B. 1947, Pennsylvania State College	Nev. D.C. Pa.	Skinner, Henry Ross A.B. 1947, University of Wyoming Smith, Chester Horace Stehl, Edward III A.B. in Govt. 1949, The George Washington University	Wyo. Nev. Va.
Oberman, Harvey Boyd, Jr. A.B. 1949, The George Washington University	Vt.	Steinbauer, Walter Henry, Jr. B.S. 1947, Emory and Henry College	D.C.
Patton, Arthur Gordon A.B. 1946, Yale University	Va.	Steinberger, Hugh Marion B.S. 1941, University of Virginia	D.C.
Pearson, Beverly Stokking A.B. 1946, Vassar College	Md.	Stephens, William Theodore Sullivan, Thomas Vincent A.B. 1942, New York University	Md. N.Y.
Peisner, Arthur A. Pendergrass, John Mullard A.B. 1945, Kalamazoo College M.P.A. 1946, Wayne University	Md. Va.	Tafelberg, Ben Tashjian, Lee Charles A.B. 1949, The George Washington University	Md. Md.
Phillips, Gordon Allison Ph.D. 1947, University of Chicago	Tex.	Ussery, Harry McRae Vance, John Thomas A.B. 1947, University of Montana	Va. Md.
Philpitt, Frederick Charles B.S. 1947, University of Maryland	D.C.	Varoutsos, Paul George Waldron, Richard Vernell Ed B. 1948, Southern Illinois University	Ill.
Rath, Robert Karl Rich, Francis Earl B.S. 1941, United States Naval Academy	Ohio Miss.	Woodline, Francis Albert A.B. 1946, The George Washington University	Md.
Ries, Carl Gilbert B.S. 1947, University of Wyoming	Wyo.	Yarnoff, Leroy Mills Young, Jack Martin B.S. 1943, Case Institute of Technology	D.C. Ohio
Robbins, Glenn Kingsland B.S. 1947, Washington University	Miss.		
Rodgers, James Edwin Romero, Mario Saveria B.S. 1949, National University of Mexico	Pa. Tex.		
Rood, George Henry A.B. 1939, University of Florida	Fla.		
Roubideaux, Ramon Arthur Rowe, Willis Case A.B. 1949, The George Washington University	S.D. D.C.		

JURIS DOCTOR

NOVEMBER 11, 1949

Cavanagh, John Edward A.B. 1941, University of Oregon	Ore.	Seidel, Arthur Harris B.S. 1942, College of the City of New York	N.Y.
Dixon, Rod Paul A.B. 1947, University of Utah	Utah	Stewart, Rodney Ward A.M. 1943, University of Michigan	D.C.
Earle, William Kehr B.S. 1940, United States Coast Guard Academy	Pa.	A.B. 1943, Carleton College A.M. 1934, University of Chicago Ph.D. 1938, Harvard University	Utah
Minnick, John Bradley A.B. 1935, Amherst College	Va.	Woodbury, Wallace Richards A.B. 1947, University of Utah	
Netterville, Victor Samuel A.B. 1947, Indiana University	Ind.		
Pettigrew, Wilbur B. B.S. 1930, State Teachers College, Maryville, Mo.	Va.		
M.S. 1939, Iowa State University			

FEBRUARY 22, 1950

Millman, Max Roland	N.Y.	Siegel, Abraham	Calif.
B.S. 1937, The College of the City of New York		B.S. 1940, The College of the City of New York	

MAY 31, 1950

Breslauer, Ruth Cooper	D.C.	Reid, James Sharp	D.C.
(With distinction)		A.B. 1937, Cornell University	
B.S. 1945, The George Washington University		Reffin, Martin Gardner	N.Y.
Donnelly, Henry Joseph, Jr.	Va.	(With distinction)	
B.S. 1928, University of Pennsylvania		B.M.E. 1945, College of the City of New York	
Goldsborough, George Joseph, Jr.	Md.	Sweitzer, Henry Becker	Pa.
B.S. 1947, United States Military Academy		B.S. 1941, United States Naval Academy	
Patty, Clarence Ralph, Jr.	Tenn.		
B.S. 1940, University of Tennessee			

MASTER OF LAWS

NOVEMBER 11, 1949

Bailey, William Alfred	Tex.	Kait, Harry Carl	N.J.
LL.B. 1948, The George Washington University		B.S. 1928, Temple University	
Boroughs, Lewis Edward	N.C.	LL.B. 1938, Rutgers University	Ala.
LL.B. 1948, The George Washington University		Manning, Glenn Franklin	
Brain, William Herbert	Ill.	LL.B. 1948, University of Alabama	D.C.
B.S. 1944, University of Illinois		Page, Helen Bell	
LL.B. 1948, The George Washington University		LL.B. 1948, The George Washington University	D.C.
Chang, Richard I-Feng	D.C.	Pickens, John Kenneth	
A.B. 1943, St. John's University		A.B. 1939, The George Washington University	
LL.B. 1949, DePaul University		LL.B. 1942, Harvard University	Md.
Embrey, Lemuel Jackson	Va.	Roberts, Richard Mansfield	
A.B. 1937, LL.B. 1949, The George Washington University		LL.B. 1948, The George Washington University	Mo.
Guimond, Joseph Alexandre	Ohio	Russell, William David	
A.B. 1931, LL.B. 1933, Western Reserve University		A.B. 1936, LL.B. 1938, University of Missouri	La.
Hudgins, John Jefferson	D.C.	Sylvester, Malcolm Duncan	
LL.B. 1940, The George Washington University		B.S. 1924, United States Naval Academy	
Hudson, Dugald Walker	S.C.	J.D. 1919, The George Washington University	
B.S. 1940, Presbyterian College			
LL.B. 1940, The George Washington University			

FEBRUARY 22, 1950

Choulas, James George	N.Y.	Littman, Simon	D.C.
LL.B. 1949, The George Washington University		LL.B. 1911, University of Maryland	
Cotter, Francis Aloysius	Md.	McGrail, Edward Hugh	N.J.
LL.B. 1949, The George Washington University		A.B. 1943, St. Peter's College	
Gardner, Edith Rose	Va.	LL.B. 1948, Georgetown University	Miss.
A.B. 1943, University of California at Los Angeles		McLaurin, Lillian Catherine	
LL.B. 1948, The George Washington University		A.B. 1917, LL.B. 1939, Vanderbilt University	
Hobbes, Alan Buxton	Fla.	B.S. 1921, George Peabody College for Teachers	Va.
A.B. 1939, Washington and Lee University		Munves, William	
LL.B. 1947, The George Washington University		A.B. 1912, College of the City of New York	
Kardy, Leonard Thomas	Md.	J.D. 1936, New York University	D.C.
LL.B. 1949, The George Washington University		Narron, Wiley	
		LL.B. 1943, The George Washington University	

Preston, Edwin Page LL.B. 1948, Washington and Lee University	Tenn.	Whitesel, James Warren B.S. 1943, Wake Forest College J.D. 1948, The George Washington University	D.C.
Reynolds, Chester Forrest LL.B. 1949, The George Washington University	W.Va.		

MASTER OF COMPARATIVE LAW

NOVEMBER 11, 1949

Beyen, Karel Herman Juris Candidatus 1949, University of Utrecht Juris Doctorandus 1948, University of Amsterdam	Netherlands	Del Russo, Alessandra Iaini Doctor Litterarum 1949, State University, Milan Doctor Jurisprudence 1949, State University, Pavia	Italy
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FEBRUARY 22, 1950

Bourdon, Edouard Docteur en Droit 1938, Liege University	Belgium	Fisher, John Hanus J.D. 1931, University of Prague	Md.
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MAY 31, 1950

Altman, Gerald B.S. 1943, LL.B. 1949, Boston University	Mass.	Halen, John Thomas A.B. 1949, Brooklyn College LL.B. 1949, St. Johns University	Va.
Bartimo, Frank Antonio A.B. 1941, Clark University LL.B. 1944, The George Washington University	Mass.	Harper, Richard Howard LL.B. 1949, The George Washington University	W.Va.
Blessing, Melvin Junior B.C.E. 1940, Cornell University LL.B. 1949, Georgetown University	Va.	Hart, Seward Lyman A.B. 1938, Yankton College LL.B. 1949, The George Washington University	S.D.
Bronaugh, Alfred Taylor B.S. 1949, J.D. 1949, The George Washington University	D.C.	Hodges, Willard Jefferson, Jr. LL.B. 1937, University of Alabama	Ala.
Buldain, Frank Javier A.B. 1933, LL.B. 1935, Baylor University	Tex.	Homesel, Robert Wright, Jr. B.S. 1943, The Citadel LL.B. 1949, The George Washington University	S.C.
Coggins, John Wesley LL.B. 1940, The George Washington University	N.C.	Kaplan, Harold Irving B.S. 1942, University of Maine LL.B. 1948, Harvard University	Mass.
Dreca, George Calvin B.S. 1945, University of Alabama LL.B. 1948, The George Washington University	D.C.	Kiechel, Walter, Jr. A.B. 1941, University of Nebraska LL.B. 1940, Yale University	Nebr.
Earle, John Howard B.S. 1943, Pennsylvania State College LL.B. 1949, The George Washington University	D.C.	Kuchler, Ralph Rudolph A.B. 1948, LL.B. 1949, The George Washington University	Utah
Ehrlich, Bernard Herbert A.B. 1947, LL.B. 1949, The George Washington University	D.C.	Kunz, Karl Michael Ph.B. 1941, Providence College LL.B. 1947, Georgetown University	R.I.
Galina, Victor John LL.B. 1941, Georgetown University	Mass.	Leary, Robert George LL.B. 1949, The George Washington University	D.C.
Gilmore, Frank Peter B.S. 1927, M.D. 1929, Loyola University	Ill.	Levin, Joseph LL.B. 1949, The George Washington University	Md.
LL.B. 1949, The George Washington University		Long, George Edward LL.B. 1949, The George Washington University	Md.
Gorman, Vincent Andrew LL.B. 1948, St. John's University	N.Y.	Moore, Charles Clifton, Jr. LL.B. 1949, The George Washington University	Va.
Gravatte, Robert Howerton, Jr. A.B. 1943, LL.B. 1947, University of Virginia	D.C.	Nowlin, Joe Franklin LL.B. 1949, University of Arkansas	Ark.

Palmer, Lowell Richard	Va.	Sumney, Ara Long	W.Va.
LL.B. 1949, The George Washington University		LL.B. 1946, University of Richmond	
Pelleri, Leo Maurice	D.C.	A.B. 1946, West Virginia University	Va.
LL.B. 1949, The George Washington University		Swartz, Christian Lefevre	
Pettigrew, Wilbur B.	Iowa	B.S. 1947, University of Pennsylvania	
B.S. 1944, Missouri State Teachers College		LL.B. 1946, Temple University	N.M.
M.S. 1949, State University of Iowa		Triviz, Edward Ernest	
J.D. 1949, The George Washington University		A.B. 1942, New Mexico College of Agriculture and Mechanic Arts	
Richwine, Francis Kost	Pa.	LL.B. 1949, The George Washington University	Tex.
B.S. 1941, Pennsylvania State College		Turron, Edward Arnold	
LL.B. 1949, The George Washington University		A.B. 1942, LL.B. 1948, The George Washington University	D.C.
Rousar, Edward Everett	Okla.	Watkins, William Henry	
LL.B. 1949, The George Washington University		B.S. 1949, University of Maryland	
Stanley, Earl R.	Ohio	LL.B. 1949, The George Washington University	Va.
B.S. 1941, Kent State University		Webster, John Mark	
LL.B. 1949, The George Washington University		B.S. 1942, University of Minnesota	
Steenerson, Palmer Seymore	D.C.	LL.B. 1947, The George Washington University	Fla.
LL.B. 1949, The George Washington University		Wyatt, John Walton	
Streinz, Clare Julia	Pa.	B.S. 1948, State Teachers College, Troy, Ala.	
LL.B. 1949, The George Washington University		LL.B. 1947, University of Florida	

THE SCHOOL OF ENGINEERING

BACHELOR OF CIVIL ENGINEERING

NOVEMBER 11, 1949

Angelaras, James George	D.C.	Mandragos, Constantine Nicholas	Md.
Buzzell, Donald Alan	Va.	Percy, Morgan F.	N.Y.
Heiser, Will Maynard	Colo.	Riner, William Carter	Ga.
A.B. 1938, Oberlin College			

FEBRUARY 22, 1950

Austin, Roland Michael	D.C.
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MAY 31, 1950

Clark, Lyman Ernest	Md.	Martins, Elsom Solano	Brant
Collins, Webster Horace	Pa.	McConnell, Richard D.	Va.
Davis, Richard Nathan	Va.	Middleton, Glenn Arthur	D.C.
Dimmette, Claude Chester, Jr.	D.C.	Offenbacher, Hurley Francis	D.C.
Dotson, Daniel Keating	Nev.	Roamer, James Mahan, Jr.	D.C.
Fanton, Herman Theodore, Jr.	D.C.	(With distinction)	D.C.
Flynn, Alfred Filer, Jr.	D.C.	Robins, James Edward	Pa.
Gallo, Raphael Edmund	N.Y.	Smale, Ronald Anthony	Fla.
Goforth, George Tuttle	Va.	Smith, Truett Conwell	Fla.
Jennings, Rufus Floyd, Jr.	Md.	Taylor, George Oliver	Md.
Koester, Richard Eugene	D.C.	Tittrington, George Frank, Jr.	D.C.
Martin, James Lewis, Jr.	D.C.	Vogel, Bertram Marvin	

BACHELOR OF ELECTRICAL ENGINEERING

NOVEMBER 11, 1949

Asano, Paul Sachio	Utah	Klein, William Joseph John	N.Y.
Bird, William Lawrence	D.C.	Libby, Edwin Clark	N.H.
Brown, Kenneth Ray	D.C.	Lowrie, Elwood Dawson	N.J.
DeVico, Luigi	N.Y.	Marsteller, Herbert Heiskell	Va.
Hintze, William	D.C.	Snyder, Gilbert Reed	

FEBRUARY 22, 1950

Dupre, Forrest Francis
Marthak, BennisR.I.
N.Y.

Stephenson, Earl Donald

D.C.

MAY 31, 1950

Arsem, Collins
Blumberg, Marvin
Breeskin, Sol Daniel
Brzozowski, Edmund
Buck, Fred Everett
Bussler, John McCrossin
Bussler, Robert Bruce
Compton, Milton Edwin, Jr.
Conner, John Paul
Cosman, Alvin
Cudd, George Benjamin
Danforth, Robert Compton
Daniels, Richard Gauntlett
Egloff, Edward
Hamilton, Edwin Earl
Hamilton, Samuel Graham
Harrahan, Donald Joseph
Huffman, Randolph Edgar
Johnson, Theodore Robert
Kee, Richard Moy
Kendall, Frank Herbert, Jr.
Kiernan, Robert James
Knopp, Arthur Maxwell
Kortman, Cecil M.
Landman, Louis

Md.
N.J.
D.C.
Mass.
Va.
D.C.
D.C.
D.C.
Pa.
D.C.
S.C.
Va.
Md.
D.C.
Va.
Mass.
N.Y.
Md.
D.C.
D.C.
Md.
Ohio
D.C.
Tex.
D.C.

Lavy, Irvin Jack
Lourenco, Manuel Joseph
Maskaleris, Christos Louis
McClain, Edward Fiter, Jr.
McPhail, John Finley, Jr.
Murray, James Andrew, Jr.
Ohl, Robert Franklin
Packer, Ellis Reed
Robertson, Bedford Shelton, Jr.
Rockowitz, Jerome Bernard
Saba, Michael
Sadler, Emmett Garner
Schkolnick, Herman
Seal, Frank Walker
Simeroth, John William
Stambach, George Leonard
Vicory, Howard Morton
Warden, Burslett Stryker, Jr.
Warner, Gerald Lee
Watkins, Cleveland Foster
Watkins, Phillip Lewis
(With distinction)
Weinberger, Elias
Whittemore, William Kittredge
Wise, Robert Arthur

D.C.
Mass.
Conn.
Tenn.
Tenn.
D.C.
Va.
D.C.
D.C.
N.Y.
Pa.
D.C.
D.C.
Md.
Okla.
Pa.
Va.
Va.
D.C.
Md.
Md.
N.Y.
D.C.
Pa.

BACHELOR OF MECHANICAL ENGINEERING

NOVEMBER 11, 1949

Bell, Ivan Francis
Bennett, Kenneth Chester
Breezeale, James Allen
Crupper, Joseph Lee III
Ell, Martin Arthur
Freeman, Lawrence Dudley
B.E.E. 1949. The George Washington
University
Galeano, Charles Joseph
Grant, Orland Wolcott
Hamilton, Jack Hobert

Va.
Va.
Mo.
Md.
Pa.
Mass.
Md.
N.J.
D.C.

Holliday, Reynold Ross
Houck, David Russell
Karczmarczyk, Edward John
Morgan, John William
Ollendorf, Donald
(With distinction)
Price, Joseph Lindsey, Jr.
Ryder, James Andrew
Sirota, Solomon
Swanson, Ragnar Gosta
Taylor, James Edward

Pa.
Pa.
Mass.
W.Va.
Va.
Va.
N.Y.
N.Y.
N.Y.
Mass.
Va.

FEBRUARY 22, 1950

Bartik, Richard
Brown, Robert William
Burns, Bland Calvin
Cassell, Irving Seymour
Davidson, Chester Peter
Davidson, Frank Joseph
Dawson, James Alfred

N.J.
Md.
Va.
N.Y.
N.Y.
N.Y.
Va.

Grayson, Howard Avery
Herndon, Donald Floyd
Lucas, Henry August
O'Brien, Anthony Aloysius
Proctor, Lawrence Barnes, Jr.
Sirota, Milton

D.C.
Md.
N.Y.
D.C.
D.C.
N.Y.

MAY 31, 1950

Chaoe, Nicholas George
Cleary, Vincent Walter
Crowell, Harry Bennett
Hunter, Eldred Tait, Jr.
Hutley, Karl Corley
Jefferson, William Douglas
Kulp, Russell Nyce, Sr.
Mayer, Fred Louis
Percival, William Alfred
Schraitle, Arthur William

D.C.
Va.
D.C.
Md.
Md.
D.C.
Md.
D.C.
Pa.
Va.

Shipp, Thomas Wooten
Showker, Julian Mansour
Startz, Raymond Francis
Thompson, Frank Revell
Volin, Rudolph Herbert
Werner, Monroe Mark
A.B. 1918, Brooklyn College
Widman, Joseph William
Wright, Willard Alden

D.C.
Va.
Kans.
Va.
Ohio
N.Y.
D.C.
Pa.

BACHELOR OF SCIENCE IN ENGINEERING

NOVEMBER 11, 1949

Buckley, Robert Baldwin	Wis.	Mainhart, Howard Morsell	Md.
Burton, Lockwood Duquesne	D.C.	Mendelson, Michael	N.J.
Lendley, Charles Raymond	La.	Richards, James Carlin	Va.
Lalajegen, Ervin James	Md.		

FEBRUARY 22, 1950

Blake, Harry Thomas	D.C.	Morgan, Robert Eltonzo	Md.
Heim, Seymour	N.Y.	Schletter, Martin Sheldon	N.J.
Irico, Joseph	N.Y.		

MAY 31, 1950

Bunker, Joseph Baldridge, Jr.	Md.	LaTorre, Richard Robert	N.Y.
Conrad, Robert William	D.C.	Lee, Stanley Jerome	N.Y.
Custard, Robert Franklin	Va.	Mann, Charles Kenneth	Md.
Flynn, Laurence Brendan	N.Y.	Mastello, Joseph Alvin	Va.
Gaskins, Richard Hancock	D.C.	McPhail, Harvey Franklin, Jr.	D.C.
Grant, Leonard Joel	N.Y.	Mellinger, Harry Albert	Va.
Greer, Thomas Jefferson, Jr.	Tex.	Repak, Peter	Pa.

THE SCHOOL OF PHARMACY

BACHELOR OF SCIENCE IN PHARMACY

NOVEMBER 11, 1949

Hollingsworth, Russell Kuhner Jr.	D.C.
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FEBRUARY 22, 1950

Arch, Edward Kenneth	Pa.	Rosen, Sam	D.C.
Rankin, Billy Frank	W.Va.		

MAY 31, 1950

Abramson, Aaron	N.Y.	Lawson, Adrian Lee	Va.
Adelson, Morton Jackson	N.Y.	Levin, Haskell	D.C.
Albright, Frank Glenna	W.Va.	Moskowitz, Milton Sam	D.C.
Bay, Paul Georgeaff	Ill.	Nernberg, Ralph Amos	Fla.
Bressler, Wilson Kress	Ind.	Niefeld, Herbert	D.C.
Burton, William Miles	D.C.	Orloff, Milton	D.C.
Cohen, Albert Abraham	D.C.	Pannill, William Eliason	D.C.
Dichter, Jack C.	N.J.	Pickett, Robert Eugene	Ohio
Draphin, Leon Isadore	Md.	Rosenberg, Walter Saul	N.Y.
Felicetti, Dominic	R.I.	Schweiger, Raymond Morris	N.Y.
Futterman, Sidney	Md.	Silva, Harold	Tenn.
Geloso, Samuel Theodore	N.Y.	Simon, Philip James	Iowa
Goldberg, Jack	D.C.	Stone, Joseph Jack	D.C.
Heller, Milton	Md.	Thomas, Howard Adams	Va.
Johnson, Clyde George	Md.	Title, Irwin	D.C.
Johnson, Warren Louis	Md.	Wasserman, Selma	D.C.
Kan, Perry Harlan	Va.	Ways, Douglas Arthur	W.Va.
Katz, Morton Harry	Md.	Wilson, Mary Alice	Nebr.
Keahey, William	D.C.	B.S. 1930, University of Nebraska	
Koustenis, Harry George	Ohio	Zimmer, David Joseph	Md.
Kuhn, Mark Joseph	D.C.		

THE SCHOOL OF EDUCATION
BACHELOR OF ARTS IN EDUCATION

NOVEMBER 11, 1949

Cox, Omer Lorraine	Ill.	Saylor, James Burton	Pa.
Finchum, Carol Mazaroff	D.C.	Shumate, Martha Lee	W.Va.
Henebry, Alfred Garrett	D.C.	Taylor, Ada Elizabeth	D.C.
Hense, James Albert	Pa.	White, Marian Virginia	Va.
Rodas, Adela	Puerto Rico		

FEBRUARY 22, 1950

Schwartz, Herbert	D.C.
-------------------	------

MAY 31, 1950

Beren, Irene Frances	Wis.	Morrison, Robert Reid	D.C.
Bryde, Georgia Rea	Md.	O'Meara, William Raymond	D.C.
Cason, Vivian Jamie	Fla.	Palmer, John Gilbert	Md.
Creighton, William James	Mass.	Parlen, Bernard Leonard	D.C.
Dierz, Glenn Allen	Fla.	Poljack, Helen Louise	Vt.
Dobbis, Barbara	N.Y.	Previte, Charles Richard	N.J.
Evenson, Norma Doris	D.C.	Pyle, Jane	D.C.
Fox, Margaret Helen	D.C.	Read, Mary Sue	Ill.
Grewal, Rajwant Kaur	D.C.	Rice, Carol Lynn	D.C.
A.B. 1942, Nagpur University, India		Rouleau, James Petrie	D.C.
Hager, Florence Betty	Md.	Ryan, James Joseph	N.Y.
Harper, Edith Elizabeth	D.C.	Schlemer, Nancy Early	D.C.
Havell, Olga Marge	Va.	Sergeant, Audrey Lou	D.C.
Heilmann, Marjory Ann	Md.	Simmons, Thelma Thompson	Calif.
Jones, Walter Warren	Ky.	Sutherland, Dorothy Gaile	Md.
Kelly, Harry Joseph	Pa.	Thompson, Winifred Grace	Md.
Langerman, Elaine Mildred	D.C.	Vickers, Ollin Dalton	Calif.
(With distinction)			

BACHELOR OF SCIENCE IN HOME ECONOMICS

NOVEMBER 11, 1949

Beck, Mary Elizabeth	Va.	Suntay, Aurora Silvia	Philippines
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MAY 31, 1950

Bauer, Mary Graybill	Md.	McGriff, LaDonna Lee	Va.
Buck, Barbara Lou	Va.	Rohrs, Beverly Ann	Md.
Corvin, Alice Elizabeth	D.C.	Sequist, Ruth Ellen	D.C.
George, Joan Marjorie	Va.		

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

NOVEMBER 11, 1949

Butkus, Carl John	Pa.	Sheppy, Phyllis	Fla.
Mitchell, Nan	D.C.	(Special honors in Physical Education)	
Peel, Ella Leuvenia	D.C.	Talbott, Philip, Jr.	D.C.

FEBRUARY 22, 1950

Auriti, Anthony Augustine	D.C.	Porton, John William	D.C.
Miltzer, Gustave David	D.C.	Stanislawczyk, Joseph Michael	Pa.
Moffatt, Samuel John	D.C.		

MAY 31, 1950

Bernot, Joseph John
Bovee, Howard Ralph
Caruso, Anthony John
Cavallo, Frank Nicholas
DePaoli, Dora Marie
Druckemiller, Donald James
Famulatte, Julius Anthony
Fleetwood, George Harlan
Gottesman, Alexander Morry
Grinnell, John Robert
Howell, David Mitchell

Pa.
Vt.
N.Y.
Mass.
N.Y.
Va.
N.Y.
Del.
Va.
Mass.
D.C.

Kennedy, Arthur Wallace
Merrell, Robert Franklin
Mitchell, Mary Lynn
Pietras, Chester Joseph
Regan, James Andrew
Sato, Edward Hifumi
Spangler, Leonard William
Stein, Julian Ulman
Suttle, Herman Judson
Tully, Jean Alice

N.J.
D.C.
D.C.
Mass.
Hawaii
Va.
D.C.
W.Va.
Va.

BACHELOR OF ARTS AND MASTER OF ARTS IN EDUCATION
(Five-year Program)

MAY 31, 1950

Heine, Edward George
(Special honors in Education)

Md.

MASTER OF ARTS IN EDUCATION

NOVEMBER 11, 1949

Benson, Margaret Brown
A.B. 1940, East Carolina Teachers
College
Blaisdell, Lemuel Anthony
B.S. 1940, University of Minnesota
Bon, Franklin Albert
A.B. 1948, College of William and
Mary
Bride, Crescent Joseph
B.S. 1930, Arnold College
A.B. 1938, University of Maryland
Brown, Imogene Russell
A.B. 1931, East Central State College,
Ada, Okla.
Brown, James Grady
A.B. 1948, The George Washington
University
Buckley, Ralph Edward
B.S. 1948, Virginia Polytechnic
Institute
Cline, June Antonia
A.B. 1946, Roanoke College
Coyle, Kathryn Rosamond
A.B. 1935, Emmanuel College
B.Ed. 1936, Rhode Island College of
Education
Crooker, Barbara Travis
A.B. 1944, Carleton College
Davis, Elsie Wyllie
B.S. 1941, New Haven State Teachers
College
Dean, Louise Wadhams Blakeslee
A.B. 1910, Wellesley College
Decker, Charlotte Burch
B.S. 1930, Wilson Teachers College
Erp, Marjorie Jean
A.B. 1942, Washington State College
Fenn, Geraldine Georgiana
B.S. 1933, South Dakota State College
Gardner, Sophia Schneider
B.S. 1936, New York University

Md.
Minn.
D.C.
Md.
Va.
Md.
Va.
R.I.
Va.
D.C.
Conn.
D.C.
Wash.
Mont.
Va.

Garnett, Carroll Marion
B.S. 1948, The George Washington
University
Gordon, Woodrow Wilson
A.B. 1935, Randolph-Macon College
Handler, Alvin Irving
B.S. 1939, Syracuse University
Hebda, Edward Albert
A.B. 1930, Pennsylvania State College
Indorf, Frederick Anderson
B.S. 1938, University of Missouri
Ingram, Frances Baker
A.B. 1947, The George Washington
University
Jackson, Robert Eugene
B.S. 1947, The George Washington
University
Johnson, Elsie Nora
B.S. 1916, Wilson Teachers College
Kenney, Katherine Jane
B.S. 1940, University of Maryland
Lawrence, Roger Lee
B.S. 1943, Ohio State University
Massie, Katie Garland
B.S. 1914, Longwood College
Michelson, Samuel
A.B. 1949, The George Washington
University
Olshaker, Gertrude Edith
B.S. 1944, Wilson Teachers College
Phippings, Edna Mae
B.S. 1941, Mary Washington College
Remaley, Charles Bertella
B.S. 1935, Allegheny College
Reynolds, Gerald George
A.B. 1943, Saint Olaf College
Saverance, Carolyn McNair
A.B. 1940, Winthrop College
Slattery, Francis Joseph
B.S. 1935, Wilson Teachers College
Smith, Orval James
A.B. 1947, University of Wyoming

Va.
Va.
N.Y.
D.C.
Mo.
D.C.
Ind.
D.C.
Md.
Ohio
Va.
N.Y.
D.C.
Va.
Md.
Minn.
S.C.
D.C.
D.C.

Degrees Conferred

371

Tate, Marian Keefer A.B. 1925, The George Washington University	Md.	Turner, Edward Clarence B.S. 1941, University of Maryland	Md.
B.D. 1948, Chicago Theological Seminary		Vleck, Myron Edward B.S. 1943, The George Washington University	N.J.
Trainham, Eliza Hunter B.S. 1928, College of William and Mary	Va.	West, Sally Frances B.S. 1939, Wilson Teachers College	D.C.
Turberville, Alice Atwell B.S. 1942, Mary Washington College	Va.	Ziebro, Stanley Robert B.S. 1942, The George Washington University	N.J.

FEBRUARY 22, 1950

Benson, Virginia Beach A.B. 1936, College of William and Mary	Va.	Ross, Cordelia Hildegard B.S. 1941, State Teachers College, Farmville, Va.	Va.
Clower, Charles James William A.B. 1947, Shepherd College	W.Va.	Shipley, John Bruce A.B. 1940, Shepherd College	W.Va.
Curry, Mary Brerton B.S. 1942, New York State College for Teachers	N.Y.	Thorman, Dale Leonard B.S. 1910, University of Nebraska	Va.
Dontsch, Jewel Elizabeth B.S. 1940, Oklahoma College for Women	D.C.	Walker, Isabelle Pennington A.B. 1934, Centre College	Ky.
Gore, John William A.B. 1947, Shepherd College	W.Va.	W.A.M. 1945, Gallaudet College	
Ihrig, Katherine Anna A.B. 1931, University of Wisconsin	Ohio	Watson, Rosa Lee A.B. 1914, Western Maryland College	Md.
Kupka, Anthony B.S. 1940, Ithaca College	Md.	Widmeyer, Walter Ralph A.B. 1931, Shepherd College	W.Va.
Pagan, Katharine B.S. 1939, Wilson Teachers College	D.C.	Willard, Marjorie Avery B.S. 1944, Madison College	Va.
		Yurwitz, Julius Peter B.S. 1910, The George Washington University	Md.

MAY 31, 1950

Agens, Jeanette Field A.B. 1942, University of Oregon	Oreg.	Jackson, Frances Beatrice B.S. 1941, M.S. 1936, University of Tennessee	Tenn.
Alley, Edith B.S. 1938, Western Carolina Teachers College	N.C.	Jeffries, Corinne Fieger A.B. 1944, Baldwin-Wallace College	Ohio
Bates, Ward Pendleton A.B. 1939, Trinity College	Md.	Jones, Helen Stuart B.S. 1936, Mary Washington College	Va.
Bauer, John Joseph Ph.B. 1945, Brown University	Mass.	Kier, William Ralph B.S. 1940, State Teachers College, Indiana, Pa.	Va.
Benson, Arthur Leonard A.B. 1931, Lehigh University	N.J.	Leiper, Mary Rita B.S. 1937, Wilson Teachers College	Md.
Caples, Willis Harry B.S. 1946, University of Oregon	Nev.	Moore, Clifton Robert B.P.E. 1923, Springfield College	D.C.
Coleman, Mary Ellen B.S. 1947, Madison Teachers College	D.C.	Ott, Katherine Anna B.S. 1934, Western Reserve University	Va.
Gustafson, Melbourne Gustaf A.B. 1938, Augustana College	Va.	Owings, Ruth B.Mus. 1928, Forman University	S.C.
Harris, John Samuel, Jr. B.S. 1943, Wilson Teachers College	D.C.	Pickett, Nina Alleyne A.B. 1932, The George Washington University	Ill.
Harris, Virginia Berenica B.S. 1940, University of Virginia	Va.	Shade, James Russell, Jr. B.S. 1940, Millersville State Teachers College	Va.
Howard, Henrietta Rothwell B.E. 1937, Milwaukee State Teachers College	Wis.	Watson, Virginia Hensell A.B. 1930, West Virginia University	Va.
Hoyt, Kenneth Boyd B.S. 1948, University of Maryland	Md.	Wright, William Warren B.S. 1940, Capital University	N.D.
Iacangelo, Ralph Pasquale B.S. 1948, Wilson Teachers College	D.C.		

DOCTOR OF EDUCATION

NOVEMBER 11, 1949

Holliday, Frances B.S. 1920, Northwest Missouri State Teachers College	Ind.	Rumbough, William Samuel B.S. 1927, A.M. 1946, The George Washington University	Va.
A.M. 1928, University of Missouri		Dissertation: "Management of the High School Principal's Office"	
Dissertation: "The Teaching of Methods in the Preservice Education of Elementary Teachers"			

FEBRUARY 22, 1950

Johnson, Howard Odin
Ed. B. 1944, State Teachers College,
Eau Claire, Wis.
A.M. in Ed. 1948, The George
Washington University
Dissertation: "The Development of
More Effective Methods of Train-
ing Electronic Technicians in the
Navy"

Va.

MAY 31, 1950

Hall, James Herrick
A.B. 1947, Baylor University
A.M. 1948, The George Washington
University
Dissertation: "Criteria for the Ad-
ministration of Library Service in
Christian Education in the Inde-
pendent Autonomous Church at
the Local Level"

D.C. Wilson, Harold Maurice
A.B., A.M. 1948, The George Wash-
ington University
Dissertation: "Management Planning
in Secondary Schools"

Ind.

THE SCHOOL OF GOVERNMENT BACHELOR OF ARTS IN GOVERNMENT

NOVEMBER 11, 1949

Abramowitz, Harry Arthur
(With distinction)
Adolfson, Roy Edward
Amatayakul, Ravi
Anderson, Nora Agnes
Anderson, William Abbott
Askew, William Robert
Asowitch, Sarah Gertrude
Ayers, William Glenn
Baker, William Clinton
Bakker, Cornelius Johannes
Baldwin, Robert Buckingham
Banker, Robert Darrell
Barnes, Snell Hardin
Barnett, Abby Joy
Bauernschmidt, George William, Jr.
Bennsky, George Michael, Jr.
Berry, Hugh Gordon
Bonavitch, George Michael
Boop, Mahlon Ellwood
Brazan, Richard Larry
Breuer, Alexander
Brice, Lawrence Etheridge, Jr.
Brown, Charles Robert
Brown, Lewis Donald
Brown, Roy Carl
Budstock, Leonard Edmund
Bushmaier, William Pryor
Byrne, Michael Joseph
Carter, William Joseph
Castro, Anthony Joseph
Chittenden, Joe Daniel, Jr.
Ciarrochi, Eli
Clark, Allen Culling
Clewlow, Carl William
Cohen, Morris
Coiburn, Katherine Stewart
Collier, Edwin
Cooke, Edward Andrew
Cooper, Paul Allen

N.J. Cox, George Joseph
Davenport, John Hobson
Ill. Davis, James Elijah
Siam Day, Louise Duvall
Fla. De Camara, Richard Paul
Tenn. (With distinction—Special honors
in Business Administration)
Md. De Ungria, Jose S.
D.C. DeWitt, Maynard Browning
Pa. Dibble, David Eugene
D.C. Dixon, George Carlton
N.J. Dixon, John Wainwright
N.J. Donaldson, John Eldridge, Jr.
Calif. Downes, John P.
Ill. Driscoll, John Joseph
N.Y. Duncan, John David
Md. Elliott, Robert Stanley
Md. Emerson, Charles William
D.C. Fajean, Gregory Joseph
Pa. Fitzgerald, Jack Phillips
Md. Fortugno, Alfred Eugene
N.Y. Franklin, Philip Earle
Ala. Geisler, R. Gene
D.C. Giehrst, Wayne Richard
W. Va. Gilman, Donald Lawrence
S.D. Gilmartin, Francis Edward, Jr.
Pa. Greenwald, Norman David
D.C. Gumm, Robert John
N.Y. Greening, Ralph Edward
Va. Haldish, Walter George
D.C. Herrine, Donald Dewar
D.C. Holtz, Herbert Manuel
Pa. Hude, Harry William
D.C. Hunter, Guy Norman
Va. Hurst, Carl Wilson, Jr.
D.C. Hurwitz, Harlan Earl
Va. Ikegami, David Takeshi
N.J. Jenks, Loren Morgan, Jr.
Md. Johnson, Henry Edwin
D.C. Johnston, Doris

Pa.
Va.
N.Y.
Va.
Va.
Philippines
D.C.
D.C.
D.C.
Tex.
D.C.
N.Y.
D.C.
W. Va.
Ill.
Md.
N.Y.
N.C.
N.I.
D.C.
Mo.
Mo.
Mass.
N.Y.
Mass.
N.Y.
Ill.
Conn.
Mass.
D.C.
Mass.
D.C.
Tenn.
D.C.
Hawaii
Va.
D.C.
Va.

THE SCHOOL OF EDUCATION

1950-51

THE HISTORY OF THE
CITY OF BOSTON

THE
GEORGE
WASHINGTON
UNIVERSITY
BULLETIN

VOL. XLIX

No. 6

THE SCHOOL OF EDUCATION

WASHINGTON, D. C.

PUBLISHED IN SEPTEMBER
MCML

BY THE UNIVERSITY

THE
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OF THE
WASHINGTON
AND
GEORGETOWN
COLLEGE

DEPARTMENT OF THE ARMY

WASHINGTON, D. C.
JANUARY 1, 1900
1900

THE UNIVERSITY OF THE SOUTH

CALENDAR

1950-51

CALENDAR OF THE SCHOOL OF EDUCATION

1950-51

Date	Day	Occasion
1950		
FALL TERM:		
Sept. 27-29.	Wednesday through Friday	Registration
Oct. 2.....	Monday	Academic year begins
Oct. 13.....	Friday	Thesis subjects of February Master's candidates due
Oct. 14.....	Saturday	Applications for Doctoral and Master's October comprehensive examinations due
Oct. 20.....	Friday	Dissertation subjects of May Doctoral candidates due
Oct. 21.....	Saturday	Comprehensive examinations for Doctoral and Master's candidates
Nov. 3.....	Friday	Bachelor of Arts activities plans due
Nov. 11.....	Saturday	Fall Convocation. Holiday
Nov. 23-25.	Thursday through Saturday	Thanksgiving recess
Dec. 9.....	Saturday	Applications for Doctoral and Master's January comprehensive examinations due
Dec. 22- Jan. 2.....	Friday through Tuesday	Christmas recess
1951		
Jan. 3.....	Wednesday	Classes resume
Jan. 5.....	Friday	Last day for applications for degrees to be conferred in February
Jan. 6.....	Saturday	Dissertations of February Doctoral candidates due
Jan. 8.....	Monday	Comprehensive examinations for Doctoral and Master's candidates
Jan. 20.....	Saturday	Theses of February Master's candidates due
Jan. 22-30..	Monday through Tuesday	Last day of classes for the fall term
WINTER TERM:		
Feb. 1 and 2	Thursday and Friday..	Fall examination period
Feb. 5.....	Monday	Registration
Feb. 16.....	Friday	Classes resume for the winter term
Feb. 22.....	Thursday	Thesis subjects for May Master's candidates due
		Winter Convocation. Holiday

CALENDAR OF THE SCHOOL OF EDUCATION—Continued

Date	Day	Occasion
Feb. 24.....	Saturday	Activities plans due from Bachelor of Arts candidates entering the School of Education in February
March 10...	Saturday	Applications for Doctoral and Master's April comprehensive examinations due
March 17...	Saturday	Dissertation subjects of November Doctoral candidates due
March 23 and 24...	Friday and Saturday..	Easter recess
April 13...	Friday	Dissertations of May Doctoral candidates due
		Dissertation subjects of February Doctoral candidates due
April 14....	Saturday	Applications for May graduation due
May 2.....	Wednesday	Comprehensive examinations for Doctoral and Master's candidates
May 15....	Tuesday	Theses of May Master's candidates due
May 16-24..	Wednesday through Thursday	Last day of classes for the winter term
May 27....	Sunday	Winter term examination period
May 30....	Wednesday	Baccalaureate Sermon
		Commencement
SUMMER TERM:		
June 4.....	Monday	Registration
June 5.....	Tuesday	Classes begin for the first eight-week session
June 11....	Monday	Registration and the first day of classes of the pre-session
June 29....	Friday	Pre-session ends
July 2.....	Monday	Registration and first day of classes of six-week session
July 11....	Wednesday	Applications for Doctoral and Master's July comprehensive examinations due
July 25....	Wednesday	Comprehensive examinations for Doctoral and Master's candidates
July 30....	Monday	First eight week summer session ends
July 31....	Tuesday	Registration for the second session of the summer term
Aug. 1.....	Wednesday	Classes begin for the second eight-week session
Aug. 6....	Monday	Applications for November graduation due

CALENDAR OF THE SCHOOL OF EDUCATION—Continued

Date	Day	Occasion
Aug. 10....	Friday	Six-week session ends
Aug. 13....	Monday	Registration and first day of classes of the post-session
Aug. 31....	Friday	Post-session ends
Sept. 3....	Monday	Labor Day. Holiday
Sept. 21....	Friday	Second eight-week summer session ends
		Theses of November Master's candi- dates due
Sept. 24....	Monday	Dissertations of November Doctoral candidates due
Sept. 26-28.	Wednesday through Friday	Registration for the fall term of the academic year 1951-52

THE BOARD OF TRUSTEES

The Board of Trustees of the University is composed of the President and Vice-President of the University ex officio and the following persons by election:

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Henry Parsons Erwin, A.B., *Secretary*
Newell Windom Ellison, A.B., LL.B., *Assistant Secretary*

Clarence Aiken Aspinwall
Lyman James Briggs, Ph.D., Sc.D., D.Eng., LL.D.
John St. Clair Brookes, Jr., A.M., LL.B.
Homer Cummings, Ph.B., LL.B., LL.D., L.H.D.
*Watson Davis, B.S. in C.E., C.E.
Mrs. Joshua Evans, Jr., A.B., Ed.D.
*Robert Elliott Freer, A.B., LL.M.
Charles Carroll Glover, Jr., A.M., LL.B.
Gilbert Grosvenor, A.M., LL.D., Litt.D.
*Brooks Hays, A.B., LL.B., LL.D.
John Edgar Hoover, LL.M., LL.D.
Frank Atherton Howard, B.S. in M.E., LL.B.
Alfred Henry Lawson, LL.B.
Benjamin Mosby McKelway
*Helen Newman, LL.M.
*Claude Worthington Owen, LL.M.
Walter Rupert Tuckerman, A.B., LL.B.
Alexander Wetmore, Ph.D., Sc.D.
*Charles Stanley White, M.D., Sc.D.
Lloyd Bennett Wilson

* Nominated by the alumni.

OFFICERS OF ADMINISTRATION

THE UNIVERSITY

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
Ulysses S. Grant, 3d, B.S., Graduate United States Engineers School.
Vice-President

Harold Griffith Sutton, M.S., *Director of Admissions*
Fred Everett Nessell, A.B., *Registrar; Secretary of the Faculties*
John Russell Mason, B.S. in L.S., A.M., *Librarian; Curator of Art*
Myrna Pauline Sedgwick, A.B., *Administrative Secretary*
Henry William Herzog, B.S., *Comptroller*

Donald David Blanchard, B.C.E., *Business Manager*
Claud Max Farrington, A.M., *Director of Activities for Men*
Virginia Randolph Kirkbride, A.M., *Director of Activities for Women*
Alan Thomas Deibert, A.M., *Adviser to Students from Foreign Countries*

Mitchell Dreese, Ph.D., *Dean of the Summer Sessions*
Daniel LeRay Borden, A.M., M.D., *Director of Health Administration*
Lester Allan Smith, A.M., *Director of Alumni Relations*
John Rust Busick, A.B., *Director of Public Relations*
Don Carlos Faith, A.M., *Director of Veterans Education*
Benjamin Douglass Van Evera, Ph.D., *Coordinator of Scientific Activities*

Burnice Herman Jarman, A.M., Ed.D., *Special Assistant to the President*

THE SCHOOL OF EDUCATION

THE FACULTY AND STAFF OF INSTRUCTION •

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
James Harold Fox, A.M., Ed.D., *Dean of the School of Education*

Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*
Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women*
† Frank Mark Weida, Ph.D., *Professor of Statistics*
Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
James Harold Fox, A.M., Ed.D., *Professor of Education*
Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
Frances Kirkpatrick, A.M., *Professor of Home Economics*
William Henry Myers, A.M., *Professor of Physical Education for Men*
Burnice Herman Jarman, A.M., Ed.D., *Professor of Education*
Chester Elwood Leese, Ph.D., *Professor of Physiology*
Meredith Chester Wilson, B.S., *Adjunct Professor of Education*
Ruth Coyner Little, Ph.D., *Professorial Lecturer in Education*
§ Ray LaForest Hamon, Ph.D., *Professorial Lecturer in Education*
Charles Edward Bish, A.M., Ed.D., *Professorial Lecturer in Education*
Cecil Wentworth Morgan, Ph.D., *Professorial Lecturer in Physical Education*
Henry Fred Alves, A.M., *Professorial Lecturer in Education*
§ Bernath Eugene Phillips, Ph.D., *Professorial Lecturer in Physical Education*
Robert Wendell Eaves, Ed.D., *Professorial Lecturer in Education*
Holger Kilander, Ph.D., *Professorial Lecturer in Physical Education*
Cyrus Maxwell, M.D., *Professorial Lecturer in Physical Education*
William Ashby Early, A.M., *Professorial Lecturer in Education*
Errett Glenn Featherston, Ed.D., *Professorial Lecturer in Education*
Helen Bennett Lawrence, A.M., *Associate Professor of Physical Education for Women*
Kathryn Mildred Towne, A.M., *Associate Professor of Home Economics*
Joseph Henry Krupa, M.S., *Associate Professor of Physical Education for Men*

* The President of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

† On sabbatical leave winter term 1950-51.
‡ On leave of absence 1950-51.

Elizabeth Burtner, A.M., *Associate Professor of Physical Education for Women*

Blake Smith Root, A.M., Ed.D., *Associate Professor of Education*

Ralph Windsor Ruffner, A.M., Ed.D., *Associate Professor of Education*

Lewie Woodrow Burnett, Ph.D., *Associate Professor of Education*

*Dorothy Helene Veon, Ed.D., *Assistant Professor of Secretarial Studies*

Raymond George Hanken, B.S. in P.E., *Assistant Professor of Physical Education for Men*

Marjorie Tate, A.M., *Assistant Professor of Physical Education for Women*

Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Assistant Professor of Physical Education for Men*

Jane Frost Hilder, A.M., *Lecturer in Education, Director of Reading Clinic*

*Madaline Kinter Remmlein, Ph.D., J.D., *Lecturer in Education*

LuVerne Crabtree Walker, A.M., *Lecturer in Education*

Helen Barton Goodwin, A.M., *Lecturer in Education*

Ralph Waldo Foster, A.M., *Lecturer in Physical Education*

Camilla Painter Luecke, A.M., *Lecturer in Education*

Florence Mary Lumsden, A.M., Ed.D., *Lecturer in Education*

William Samuel Rumbough, A.M., Ed.D., *Lecturer in Education*

Cannon Chiles Hearne, A.M., *Lecturer in Education*

Howard Odin Johnson, A.M., Ed.D., *Lecturer in Education*

Marie Marguerite Neeb, A.M., *Clinician, Reading Clinic*

Wesley Earl Armstrong, M.S., Ed. D., *Consultant in Research*

John Robert Ludington, Ph.D., *Consultant in Research*

William Wallace Rich, A.M., *Field Service Coordinator*

Helen King Finley, A.M., *Field Service Coordinator*

COMMITTEES ‡

THE DEAN'S COUNCIL §

1951

Thelma Hunt

Francis Kirkpatrick

1952

Frank Mark Weida
Elizabeth Burtner

1953

Joseph Henry Krupa
Blake Smith Root

* On leave of absence 1950-51.

‡ The President of the University and the Dean of the School of Education are members ex officio of all committees.

§ Elected by the Faculty.

COMMITTEE OF ADMISSION AND ADVANCED STANDING

The Dean of the School, *Chairman*

Harold Griffith Sutton

Frances Kirkpatrick

William Henry Myers

Frank Mark Weida

Burnice Herman Jarman

Ruth Harriet Atwell

COMMITTEE ON SCHOLARSHIP

Blake Smith Root, *Chairman*

William Henry Myers

Helen Bennett Lawrence

Kathryn Mildred Towne

GENERAL INFORMATION

INTRODUCTORY

It is the purpose of the School of Education to prepare teachers, supervisors, and administrators for the higher ranges of educational service and to offer opportunities to teachers of experience to extend their education. The School includes the departments of Education, Physical Education, and Home Economics.* It offers both graduate and undergraduate work. Other departments of the University provide general education and subject-matter courses needed for a well-balanced program of teacher education.

The schedule of courses is arranged to meet the convenience of both full-time and part-time students. By attending evening, Saturday, and summer classes, teachers in the schools of Washington and the vicinity may complete all the requirements for a degree without giving up their positions.

To help children and adults with reading difficulties, the School of Education operates a reading clinic for diagnosis and treatment.

HISTORICAL DEVELOPMENT

The University began offering professional courses for teachers in 1904-5 and in 1907 it established a Division of Education. In 1909, the Division of Education became the Teachers College which, in its early years, was concerned largely with teacher preparation on the undergraduate level.

In 1928, the Teachers College became the School of Education and greater provision was made for advanced study. Since that time the graduate enrollment has steadily increased with the result that today the School has a considerably larger number of graduate than undergraduate students.

ADVANTAGES OF STUDY IN THE NATION'S CAPITAL

Washington is rich in the resources needed by teachers to supplement classroom instruction. In addition to the library facilities of the University, the Library of Congress, the Library of the Office of Education, and many special collections provide unexcelled opportunities for reading and research. The operation of all branches of the National Government may be observed. Among the art galleries are the National Gallery of Art, the Corcoran Gallery of Art, the Freer Art Gallery,

* The Department of Home Economics offers a curriculum in home-making. Its program is described in a special announcement.

Phillips Memorial Gallery, and the National Museum. The winter concerts and the summer Watergate series of the National Symphony Orchestra delight lovers of good music. Those interested in science find many resources for study at the National Museum, the National Zoological Park, the United States Botanic Garden, and the Aquarium of the Fish and Wildlife Service, Department of the Interior. Teachers have unique opportunities to become acquainted with the work of the Office of Education, the National Education Association, the American Council on Education, and many other national organizations with headquarters in Washington.

ACADEMIC STATUS

The George Washington University is on the final approved list of the Association of American Universities. This fact not only assures to students the academic standards of this association, but also is important to those who desire to transfer credits from one institution to another.

The University is also accredited by its regional accrediting agency the Middle States Association of Colleges and Secondary Schools, and is on the approved list of the American Association of University Women.

The School of Education is a member of the American Association of Colleges for Teacher Education and was a charter member of the National Association of Colleges and Departments of Education prior to the merger of that association with others to form the American Association of Colleges for Teacher Education.

PROGRAMS FOR THE EDUCATION OF TEACHERS

PROGRAMS LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION FOR MEN

There are three curricula leading to this degree. The Dual-Major Teacher's Course is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Single-Major Teacher's Course prepares for the teaching of physical education in the larger schools. The Physical Education and Recreation Course has been planned for those who wish to be prepared to direct programs of recreation in addition to the teaching of physical education.

The following courses, to be taken in the Junior College, are required for admission to the School of Education:

	Credit Hours
English English 1-2	6
Social Studies History 39-40, 71-72, Political Science 9-10, or Sociology 1-2 (Freshman year)	6
..... Economics, History, or Political Science (Sophomore year)	6
Science Biology 1-2 or Zoology 1-2 (Freshman year)	6 or 8
Physical Education .. Physical Education 1-2, 11-12	4
Curriculum Electives. Physical Education 43-44, 47; Speech 1 or 11 (Freshman year)	9
..... Physical Education 45-46, 49, 50, 58; Psychology 1, 22 (Sophomore year)	18
Elective	9
Total	60 or 62

The minimum requirements for this degree are 66 credit hours, distributed as follows:

Single-Major and Subject-Certification Teacher's Course

The minimum requirements for this degree are twenty-one credit hours in education, twenty-three credit hours in physical education, nineteen credit hours in an academic teaching field, and three credit hours in physiology, distributed as follows:

JUNIOR YEAR		SENIOR YEAR	
	Credit Hours		Credit Hours
Learning and Teaching	6	Common Teaching Skills	3
Society and the School	6	Observation and Practice Teaching	6
Corrective Physical Education and Physical Examinations	3	History and Principles of Physical Education	3
Methods and Practice in Teaching Physical Education Activities ..	4	Methods of Teaching Physical Education Activities for Secondary Schools II	4
Methods and Materials of Health Education	3	Tests and Measurements in Physical Education	3
Physiology	3	Organization and Administration of Physical Education	3
Academic teaching field	8	Academic Teaching field	11
Total	33	Total	33

Single-Major Teacher's Course

The minimum requirements for this degree are twenty-one credit hours in education, thirty credit hours in physical education, three credit hours in physiology, and twelve credit hours of electives:

JUNIOR YEAR		SENIOR YEAR	
	Credit Hours		Credit Hours
Learning and Teaching	6	Common Teaching Skills	3
Society and the School	6	Observation and Practice Teaching	6
Leadership Organization in the Intramural Program	4	History and Principles of Physical Education	3
Methods and Practice in Teaching Physical Education Activities ..	4	Corrective Physical Education and Physical Examinations ..	3
Methods of Teaching Physical Education Activities for Secondary Schools II	4	Tests and Measurements in Physical Education	3
School and Community Health Programs	3	Organization and Administration of Physical Education	3
Methods and Materials of Health Education	3	Elective	12
Physiology	3	Total	33
Total	33		

Physical Education and Recreation Course

The minimum requirements for this course are 66 credit hours, distributed as follows:

JUNIOR YEAR	Credit Hours	SENIOR YEAR	Credit Hours
Learning and Teaching	3	Common Teaching Skills	3
Society and the School	6	Observation and Practice Teaching	6
Introduction to Recreation	2	History and Principles of Physical Education	3
Leadership Organization in the Intramural Program	4	Methods and Materials of Health Education	3
Methods and Practice in Teaching Physical Education Activities..	4	Tests and Measurements in Physical Education	3
Camp Leadership	1	Organization and Administration of Physical Education	3
Group Leadership Activities	6	Group Leadership Activities II..	6
Electives	7	Community Organization for Recreation	3
Total	33	Administration and Supervision of Recreation	3
		Total	33

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION FOR WOMEN

There are three curricula leading to the degree. The Dual Major Teacher's Course is designed to prepare students for positions in schools where it is necessary to teach an academic subject in addition to Physical Education.

The Single Major Teacher's Course prepares for the teaching of Physical Education in the larger schools. Within this course there is opportunity for specialization in dance, sports, or correctives.

The Physical Education and Recreation Course has been planned for those who wish to be prepared to direct programs of recreation in addition to teaching Physical Education.

For graduate courses in these areas see Programs of Study for the Degree of Master of Arts in Education, Page 24-27.

The following courses, to be taken in the Junior College, are required for admission to the School of Education:

	Credit Hours
English	6
English 1-2	6
English 51-52, 71-72, or 91-92	6
Social Studies	6
History 39-40, 71-72; Political Science 9-10; or Sociology 1-2	6 or 8
Science	4
Biology 1-2 or Zoology 1-2	4
Physical Education	4
Physical Education for Women 1-2, 11-12	16
Curriculum Electives. Physical Education 43-44 (Freshman year)	6 or 8
Physical Education 45-46, 49, 50; Psychology 1, 22 Sophomore year)	6 or 8
Academic Electives.. (Each year)	6 or 8
Total	60 or 62

Dual or Single Major Teacher's Course

The student desiring to prepare herself to teach another subject in addition to Physical Education for Women may do so by choosing her elective hours from one subject-matter field with the advice of the Dean of the School of Education. Relevant work completed in the Junior College may be counted in this subject-matter field.

JUNIOR YEAR		SENIOR YEAR	
	Credit Hours		Credit Hours
Learning and Teaching	6	Society and the School	6
Physical Education in the Elementary School	4	Observation and Practice Teaching	6
First Aid and Care of Athletic Injuries	2	History and Principles of Physical Education	3
Corrective Physical Education and Physical Examinations	6	Methods and Practice in Teaching Physical Education Activities	4
Methods of Teaching Physical Education Activities for Secondary Schools II	4	Tests and Measurements in Physical Education	3
School and Community Health Programs	3	Organization and Administration of Physical Education	3
Methods and Materials of Health Education	3	Academic teaching field or elective	9
Camp Leadership	1	Total	34
Physiology	3		
Total	32		

Physical Education and Recreation Course

JUNIOR YEAR		SENIOR YEAR	
	Credit Hours		Credit Hours
Society and the School	6	Observation and Practice Teaching	6
Introduction to Recreation	2	History and Principles of Physical Education	3
Physical Education in the Elementary School	4	Methods and Practice in Teaching Physical Education Activities	4
First Aid and Care of Athletic Injuries	2	Organization and Administration of Physical Education	3
Corrective Physical Education and Physical Examinations	6	Group Leadership Activities II	6
Leadership Organization in the Intramural Program	4	Community Organization for Recreation	3
Methods of Teaching Physical Education Activities for Secondary Schools II	4	Administration and Supervision of Recreation	3
Camp Leadership	1	Elective	5
Group Leadership Activities I	4	Total	33
Total	33		

PROGRAMS LEADING TO THE DEGREE OF BACHELOR OF ARTS IN EDUCATION

Programs leading to the degree of Bachelor of Arts in Education have three main objectives: (1) provision of a general educational background, (2) a functional command of ideas, concepts, knowledges, and skills in one or more teaching fields, and (3) a mastery of basic professional information and skills adequate for a beginning teacher. Since the contents of teaching fields differ in scope and complexity, some programs are longer than others in terms of credit hours. None require less than 126 credit hours of satisfactory work, exclusive of required Physical Education. Normally, 60 credit hours of the total requirement is completed in the Junior College of the University or in an equivalent institution elsewhere.

GENERAL EDUCATION

The general educational backgrounds needed by prospective teachers are obtained through: (1) pre-college education, (2) college courses, (3) work experience, (4) leadership activities, (5) participation in student campus activities, and (6) utilization of off-campus cultural opportunities.

College course requirements.—Course requirements depend in part upon the senior high school credits presented for college admission. They are as follows:

ENGLISH

- | | |
|--|----------------------|
| English 1-2: Freshman English..... | Credit
Hours
6 |
| Special placement examinations, required of all entering freshmen, are conducted by the English Department. Those students who show marked superiority may be exempted from one or both terms of the course. | |
| One of the following survey courses in literature..... | 6 |
| English 51-52: Introduction to English Literature | |
| English 71-72: Introduction to American Literature | |
| English 91-92: Introduction to European Literature | |

FOREIGN LANGUAGES

- | | |
|--|----|
| French, German, Latin, or Spanish..... | 12 |
| A student offering for admission four acceptable high school units of a single foreign language, or the equivalent, is not required to take any foreign language. If he offers three units, he must complete the second term of the second-year college course in the same language. If he offers two units, he must complete the entire second-year college course in the same language. If he offers one unit, he must complete the second term of the first-year college course and the entire second-year course in the same language. | |

SOCIAL STUDIES

History 71-72: The Development of American Civilization.....	5
Another Social Science chosen from the following courses.....	6
Economics 1-2: Introductory Economics	
Geography 51, 52: Introduction to Geography; Introduction to Earth Sciences	
History 39-40: The Development of European Civilization	
Political Science 9-10: Government of the United States	
Sociology 1-2: Introductory Sociology	
A student offering for admission two or more acceptable senior high school units in the Social Studies may be exempted from the second part of this requirement.	

SCIENCE AND MATHEMATICS

Two terms of science or mathematics to supplement senior high school courses in these fields and chosen from the following.....	6-8
Biology 1-2: Survey in Biology	
Botany 1-2: Structure and Functions of the Flowering Plant; Survey of the Plant Kingdom	
Chemistry 3-4: Survey of Physical Sciences	
Chemistry 11-12: General Chemistry	
Mathematics 3 and 6: College Algebra; Plane Trigonometry	
Mathematics 6 and 12: Plane Trigonometry; Analytic Geometry	
Physics 5 and 6, or 6 and 7: General Physics	
Zoology 1-2: Introduction to Zoology	

OTHER COURSES

Psychology 1: General Psychology	3
Psychology 22: Educational Psychology or	
Psychology 29: Child Psychology	3
Speech 1: Effective Speaking or	
Speech 11: Training of the Speaking Voice.....	3
Students who demonstrate marked superiority in Speech may be exempted from this requirement. Such exemption is granted only on the recommendation of the Department of Speech.	
Statistics 53: Introduction to Statistics in Psychology and Education	3

ACADEMIC ELECTIVES

Electives may be increased through the various exemptions.

PHYSICAL EDUCATION

Physical Education 1-2 and 11-12	
A student may be exempted from this requirement if registered for less than three courses or regularly employed during the day.	
Minimum required credits.....	60 or 62

Work experience, leadership activities, participation in student campus activities, and the utilization of off-campus cultural opportunities.— Obviously, these cannot be prescribed. Nevertheless, they constitute an important part of the general educational background of prospective

teachers. In conference with a staff member of the Department of Education assigned as his general adviser, the student is expected to plan adequate experiences in these areas. Not later than one month after matriculation in the School of Education the student must file in the Office of the Dean a statement of such plans approved by his adviser. He must also keep his adviser informed concerning the fulfillment of his plans and to this end include in plans filed, scheduled conferences with his adviser.

Success of the student in enriching his general educational background by these means will be taken into consideration at the end of the first term of the junior year when the faculty will review the qualifications of candidates to determine any who are not of sufficient promise as prospective teachers to warrant continuation of their candidacies. Success in these activities will also be considered when the list of candidates is again reviewed early in the last term of the senior year immediately after the results of the National Teacher Examinations are available. In estimating the success of the student in this connection, more weight will be given to evidence of initiative, eagerness to make the most of each experience, balance, and quality of experience than to the number of different experiences.

Although the student is not required to establish a program of non-academic activities until he becomes a degree candidate in the School of Education, he is advised to do so as soon as he enters the Junior College. To this end, he should consult with the Junior College adviser of students in the pre-Education curriculum soon after entering the Junior College. Whatever is accomplished in this connection while in the Junior College will reduce the obligations of the student after admission to the School of Education.

TEACHING-FIELD PREPARATION

Teaching-field preparation depends upon the kind of teaching position for which the student is preparing. Those planning to teach in elementary schools need a degree of competency in several fields. Those preparing to teach in junior or senior high schools must demonstrate competency in a major teaching field and a minor teaching field. Ordinarily, students preparing to teach in evening schools for adults are required to prove competency in only one teaching field.

The student should begin teaching-field preparation while in the Junior College and should make provision for it in planning his program of studies.

Teaching-field requirements include satisfactory completion of prescribed academic courses, a satisfactory score on the special field examination of the National Teacher Examinations, and satisfactory completion of the prescribed special methods course.

Prescribed academic courses vary in number in accordance with the scope and complexity of the teaching field and the license requirements of the various states. Minimum academic course requirements for each major teaching field are listed on succeeding pages. Minor teaching-field requirements are somewhat less than those of a major field. They are determined in conference with an adviser.

The prescribed course in special methods is concerned primarily with methods of initiating, guiding, and evaluating learning experiences dealing with the content of the teaching field. It attempts to bring to the student specific suggestions drawn from the accumulated experience of successful teachers. However, in addition, the course reviews the teaching-field content currently in use in schools and the examination at the end of the course provides the final test of competency in the teaching field.

Prescribed Courses in the Various Teaching Fields

ART

Credit Hours

One two-term course from the following group.....	6
Art 121-22: World History of Art	
Art 151-52: Modern Art	
Art 161-62: History of Art Criticism	
One two-term course from the following group.....	6
Art 101-2: The Design of the Home	
Art 141-42: Interior Decoration	
Art 143-44: Folk Arts of America	
Two two-term courses from the following group.....	24
Art 67-68: Life and Portrait—Drawing and Painting	
Art 73-74: Still Life and Portrait—Drawing and Painting; Antique Drawing	
Art 165-66: Life and Portrait—Drawing and Painting	
Art 175-76: Composition	
Art 179-80: Sculpture	
Art 183-84: Design and Commercial Art	
Art 185-86: Advanced Commercial Art	
Education 141-42: Teaching Art.....	6
Total.....	41

BIOLOGY

Biology 1-2: Survey in Biology.....	6
Botany 1: Structure and Functions of the Flowering Plant.....	3
Zoology 1-2: Introduction to Zoology.....	8
Physiology 115: Physiology.....	3
Home Economics 152: Nutrition.....	3
Additional courses as approved by the Adviser.....	12
Education 144: Teaching Science.....	3
Total.....	38

BUSINESS EDUCATION

Economics 1-2: Introductory Economics.....	6
Accounting 1: Introductory Accounting.....	3
Secretarial Studies 51: Business Correspondence and Reports.....	3
Additional courses as prescribed in <i>one</i> of the following groups:	

Group 1—Secretarial Studies

Secretarial Studies 2: Intermediate Typewriting.....	3
Secretarial Studies 12: Shorthand and Transcription.....	3
Secretarial Studies 15: Advanced Shorthand, Typewriting, and Transcription.....	3
Secretarial Studies 16: Secretarial Shorthand, Typewriting, and Transcription.....	3
Secretarial Studies 54: Secretarial Practice.....	3
Additional courses as approved by the Adviser.....	6
Education 150: Teaching Secretarial Studies.....	2
Total.....	35

Group 2—Bookkeeping, Business Arithmetic, and Business Law

Accounting 2: Introductory Accounting.....	3
Business Administration 101: Business Organization and Combination.....	3
Business Administration 102: Business Management.....	3
Statistics 52: Mathematics of Finance.....	3
Political Science 127-28: Commercial Law.....	6
Two of the following courses, as approved by the Adviser.....	6
Accounting 137: Financial Statement Analysis	
Business Administration 121: General Insurance	
Business Administration 131: Business Finance	
Business Administration 138: Investments	
Business Administration 155: Analysis of Financial Statements	
Economics 121: Money and Banking	2
Education 150: Teaching Secretarial Studies.....	
Total.....	38

Group 3—Distributive Education

Business Administration 141: Principles of Marketing.....	3
Business Administration 142: Marketing Problems.....	3
Business Administration 145: Sales Management.....	3
Business Administration 151: Retailing.....	3
Four of the following courses, as approved by the Adviser.....	12
Business Administration 146: Sales Management	
Business Administration 147: Advertising	
Business Administration 150: Principles of Purchasing	
Business Administration 158: Traffic Management	
Business Administration 174: Introduction to Foreign Trade	
Business Administration 176: Exporting and Importing	2
Education 150: Teaching Secretarial Studies.....	
Total.....	38

CHEMISTRY

Chemistry 11-12: General Chemistry.....	8
Chemistry 21: Qualitative Inorganic Analysis.....	4
Chemistry 22: Quantitative Inorganic Analysis.....	4
Chemistry 151-52: Organic Chemistry.....	8
Chemistry 191: History of Chemistry.....	2
One of the following two-term courses.....	8-10
Chemistry 111-12: Physical Chemistry	
Biochemistry 221-22: Biochemistry	
Education 144: Teaching Science.....	3
Total.....	37-39

ELEMENTARY EDUCATION

Education 113: Elementary School Art.....	3
Education 114: Elementary School Music.....	3
Education 111-12: Elementary School Curriculum.....	6
Education 127: Children's Literature.....	3
Biology 1-2: Survey in Biology.....	6
Chemistry 3-4: Survey of Physical Sciences.....	8
Geography 51: Introduction to Geography.....	3
Geography 52: Introduction to Earth Science.....	3
Political Science 9-10: Government of the United States.....	6
Physical Education 51-52: Physical Education in Elementary School	4
Total.....	45

ENGLISH

English 1-2: Freshman English.....	6
Speech 1: Effective Speaking or	
Speech 11: Training the Speaking Voice.....	3
English 51-52: Introduction to English Literature.....	6
English 72: Introduction to American Literature.....	3
English 125: The Evolution of Modern Speech.....	3
English 126: The Appreciation of Literature.....	3
English 135-36: Shakespeare.....	6
One of the following two-term courses or two one-term courses.....	6
English 181-82: The English Novel	
English 183-84: The English Drama	
English 151-52: The Romantic Movement	
English 161-62: Victorian Literature	
English 175-76: The American Drama	
English 177-78: American Fiction	
Education 136: Teaching English.....	3
Total.....	39

FRENCH

French 1-2: First-year French.....	6
French 3-4: Second-year French.....	6
French 109-10: French Conversation and Composition.....	6

French 51-52: Survey of French Literature.....	6
Additional courses in French as approved by the Adviser.....	12
Education 146: Teaching Foreign Languages.....	3
Total.....	39

GERMAN

German 1-2: First-year German.....	6
German 3-4: Second-year German.....	6
German 121-22: Conversation and Composition.....	6
German 115-16: Survey of German Literature.....	6
Additional courses in German as approved by the Adviser.....	12
Education 146: Teaching Foreign Languages.....	3
Total.....	39

HISTORY

History 39-40: The Development of European Civilization.....	6
History 71-72: The Development of American Civilization.....	6
Six credit hours, as approved by the Adviser, from each of the following groups.....	18
Group 1—American History	
History 171-72: Social History of the United States	
History 181-82: Diplomatic History of the United States	
History 173: Representative Americans	
History 174: Economic History of the United States	
Group 2—European History	
History 119: Intellectual History of Europe During the Middle Ages	
History 120: Intellectual Aspects of the Renaissance and the Reformation	
History 130: Nationalism	
History 145-46: Russian History	
History 147: Economic History of Europe	
History 148: Oversea Expansion of Europe	
History 149-50: European Diplomatic History	
History 151-52: English History	
Group 3—Latin American History	
History 161-62: Latin American History	
History 163-64: Current Latin American Problems	
Additional credit hours, as approved by the Adviser from one of the foregoing groups.....	6
Education 138: Teaching the Social Studies.....	3
Total.....	39

MATHEMATICS

Mathematics 3: College Algebra.....	3
Mathematics 6: Plane Trigonometry.....	3

The School of Education

19

Mathematics 12: Analytic Geometry.....	3
Mathematics 19: Differential Calculus.....	3
Mathematics 20: Integral Calculus.....	3
Mathematics 125: Advanced Algebra.....	3
Mathematics 132: Differential Equations, or	
Mathematics 139: Advanced Calculus.....	3
An additional course in Mathematics as approved by the Adviser....	3
Statistics 52: Mathematics of Finance.....	3
Education 140: Teaching Mathematics.....	3
Total.....	30

PHYSICS

Physics 5, 6, 7, and 8: General Physics.....	11
Physics 55: Physical Measurements.....	2
Physics 101: Mechanics.....	3
Physics 105: Principles of Electricity.....	3
Physics 106: Optics.....	3
Mathematics 12: Analytic Geometry.....	3
Mathematics 19: Differential Calculus.....	3
Mathematics 20: Integral Calculus.....	3
Chemistry Elective—Chemistry 11-12: General Chemistry or	
Chemistry 12-21: General Chemistry and Qualitative Inorganic	
Analysis.....	8
Six credit hours to be selected from the following.....	6
Physics 102: Heat and Thermodynamics	
Physics 113-14: Atomic and Molecular Physics	
Physics 128: Sound	
Physics 132: Electronics	
Physics 155-56: Advanced Physical Measurements	
Education 144: Teaching Science.....	3
Total.....	48

SOCIAL STUDIES

History 39-40: The Development of European Civilization.....	6
History 71-72: The Development of American Civilization.....	6
Political Science 9-10: Government of the United States.....	6
Two of the following courses.....	12
Economics 1-2: Introductory Economics	
Geography 51, 52: Introduction to Geography and Earth Sciences	
Sociology 1-2: Introductory Sociology	
Additional second-group courses as approved by the Adviser from one	
of the following fields: Economics, Geography, History, Political	
Science, Sociology.....	12
Education 138: Teaching Social Studies.....	3
Total.....	45

SPANISH

Spanish 1-2: First-year Spanish.....	6
Spanish 3-4: Second-year Spanish.....	6

Spanish 109-10: Spanish Conversation and Composition.....	6
Additional courses as approved by the Adviser.....	18
Education 146: Teaching Foreign Languages.....	3
Total.....	39

SPEECH

Speech 1: Effective Speaking.....	3
Speech 2: Speech Making.....	3
Speech 11: Training the Speaking Voice.....	3
Speech 32: Oral Reading.....	3
Speech 102: Oral Interpretation of Literature.....	3
Additional courses as approved by the Adviser from the following...	15
Speech 41: Parliamentary Law	
Speech 101: Introduction to Phonetics	
Speech 109: Radio Speaking and Production	
Speech 131: Group Discussion and Conference Leadership	
Speech 136: Public Discussion and Debate	
Speech 151-52: Acting	
Speech 163-64: Play Direction	
Speech 175-76: Speech Correction	
Education 136: Teaching English.....	3
Total.....	33

PROFESSIONAL EDUCATION

The basic professional information and skills needed by beginning teachers are provided through four one-year courses, two in each of the junior and senior years. Lectures and class discussions are closely coordinated with field work. Instruction is differentiated to meet the needs of those preparing to teach on the various levels—elementary school, junior high school, senior high school, and adult.

Professional Courses

Education 109-10: Learning and Teaching.....	6
Education 121-22: Society and the School.....	6
*Education 131: Common Teaching Skills.....	3
*Education 136 to 150: Special Methods.....	2-6
Education 133-34: Observation and Practice Teaching.....	6
Total.....	23-27

Learning and Teaching.—Candidates enrolled in four-year programs leading to the degree of Bachelor of Arts take this course in the junior year. Those enrolled in five-year programs take it in the senior year.

The course attempts to promote a functional understanding of the nature of learning and teaching by focussing the attention of the student

* Not required for those preparing for elementary school teaching.

upon actual classroom situations and the psychological, sociological, and educational principles relevant to them.

Classes meet for lecture and discussion two hours a week. At least an equal amount of time is spent in observation and study of classroom situations. Class discussion normally revolves around these field experiences.

The course, particularly during the first term, is also intended to provide the student with exploratory experiences of assistance to him in deciding whether or not his choice of the profession of teaching has been wise. The student's performance in connection with the course is one of the factors considered when the Faculty reviews the list of candidates who have completed the first term of the junior year (senior year for those enrolled in five-year programs).

Society and the School.—This course is also taken in the junior year by candidates enrolled in four-year programs (senior year by those in five-year programs).

The first term of the course attempts to promote an understanding and appreciation of the role of schools in the sound promotion of the enduring interests of our democratic society. More particularly, it attempts to develop a functional understanding of the contributions of all social agencies in the education of people and of desirable cooperative working relations that help the school to play its part as a member of the institutional "team" of the community.

The second term of the course is concerned with study of the school as a whole—its purposes, program of studies, out-of-class activities, general organization, and major instructional problems. Although schools at all levels are studied, students give particular attention to schools at the level within which they are preparing to teach.

During both terms of this course classes meet for lecture and discussion two hours a week. At least an equal amount of time is spent in field study. During the first term each student makes an extended study of one cooperating social institution and shorter studies of ten others. In the second term extended study of schools at the level of the student's special interest is supplemented by briefer studies of schools at other levels. Class discussion is largely determined by field experiences.

This course is also intended to provide the student with exploratory experiences of guidance value. The performance of the student in the first term of the course is also given careful consideration by the Faculty in its review of the list of candidates at the beginning of the second term of the junior year (senior year for those enrolled in five-year programs).

Common Teaching Skills.—Those enrolled in four-year programs take

this course in the senior year. Those enrolled in five-year programs take it in the fifth year.

The course is concerned with the skills needed by teachers in connection with classroom management, homeroom procedures, administrative routines, activity sponsorship, group planning, and public relations.

As in other professional courses, classes meet two hours a week for lecture and discussion and students devote at least an equal amount of time to field work. The observation of classroom teaching done in connection with the Observation Course (Education 133), for which students are normally enrolled concurrently, supplements the field work of the course.

Special Methods Courses.—Associated with each teaching field is a course dealing with its special teaching problems. In addition to the study of practices followed by successful teachers, actual teaching content as found in current texts and courses of study is reviewed. Needed content, not included in academic courses available for teaching field preparation, is taught in these courses.

Observation and Practice Teaching.—This course is taken in the senior year by students enrolled in four-year programs (in the fifth year by those in five-year programs).

It begins with the observation of classroom teaching in selected situations. Assumption of responsibility for teaching functions is gradual, leading eventually to practice in the complete direction of classroom activities. Those preparing to teach in secondary schools have the opportunity of observing and doing practice teaching in both major and minor teaching fields and on both junior and senior high school levels. The course is directed by a full-time member of the faculty of the School of Education. The work of each student is under the direct supervision of a critic teacher, selected because of unusual success in teaching, ability to supervise, and broad understanding of educational problems. Critic teachers are part-time members of the instructional staff of the School. Observation and teaching are done in the public schools of the metropolitan area of Washington, assuring practice in situations comparable to those the student is likely to face on becoming a teacher.

ADMISSION

To be admitted to candidacy for the degree of Bachelor of Arts in Education, the applicant must: (1) hold an Associate in Arts degree based on the Education Curriculum in the Junior College or the equivalent from another accredited higher institution, or a certificate of graduation from an approved normal school or the equivalent; (2) have a quality-point index of 2.00 (average grade of C) counting "Incomplete"

grades as "F"; (3) have demonstrated a genuine interest in teaching and possess personality traits that give promise of success as a teacher; and (4) have an interview in the Office of the School of Education.

FIVE-YEAR PROGRAMS LEADING TO THE DEGREES OF BACHELOR OF ARTS AND MASTER OF ARTS IN EDUCATION

Five-year programs are designed: (1) to permit more adequate teaching field and professional preparation, (2) to prepare for special teaching positions, and (3) to meet teaching-certificate requirements based upon five years of preparation.

Students in these programs usually devote the junior year to additional teaching field preparation and general education. Ordinarily teaching field preparation is continued in the senior year and the first two professional courses (Education 109-110, 121-22) are taken. The work of the fifth year includes the remaining undergraduate professional courses and the balance of graduate courses needed to meet the requirements of the degree of Master of Arts.

Candidates must have a quality-point index of at least 2.50 before beginning the work of the senior year. As much as 18 credit hours of the work of the senior year may be taken for graduate credit. Observation and Practice Teaching, taken in the fifth year, may not be taken for graduate credit.

Candidates enrolled in five-year programs are able to prepare more adequately in their major or minor teaching fields, or in both. Additional teaching field courses must be approved by the Adviser in the teaching field concerned.

The five-year plan of study also provides an opportunity for candidates to prepare to teach "common learnings" courses in one or more of the various core curriculum plans now being adopted in many secondary schools. Such programs need to be carefully planned to meet the demands of the situation in which the candidate hopes to teach.

A number of cities and some states require five years of satisfactory preparation before issuing certain teaching certificates. Candidates seeking such certificates should familiarize themselves with the requirements of the community or state concerned and plan their programs accordingly.

Five-year programs must meet all the requirements of the degrees of Bachelor of Arts and Master of Arts in Education, and must be approved by the Adviser designated for these programs.

PROGRAMS LEADING TO THE DEGREE OF MASTER OF ARTS IN EDUCATION

Programs of study leading to the degree of Master of Arts are designed: (1) to enable teachers of experience to increase their knowledge of professional and academic information and skills, (2) to prepare for special types of educational service, and (3) to provide opportunities for graduates of liberal arts colleges to acquire needed professional education.

Programs are planned in conference with the designated Adviser and take into consideration the interests of the candidate, his previous background, and the certification requirements of the state and locality in which he plans to teach.

PLANS OF STUDY

Two general plans of study lead to the degree.

Plan 1.—This plan requires a minimum of 30 hours of graduate credit, including a thesis carrying 6 hours of graduate credit.

Plan 2.—This plan requires a minimum of 33 hours of graduate credit, including a course in *Educational Research Methods and Procedures* carrying 3 hours of graduate credit.

Graduate work completed in other accredited institutions of learning may be credited toward the Master's degree, but a minimum of 30 credit hours must be completed in the School of Education of The George Washington University.

Under Plan 1, a minimum of 12 credit hours, in addition to the thesis, must be from courses planned primarily for graduate students (third-group courses). Under Plan 2, a minimum of 18 credit hours, in addition to the course in *Educational Research Methods and Procedures*, must be from third-group courses. Under either plan a minimum of 12 credit hours, not including the thesis or the research course, must be from courses offered in the Department of Education.

Programs may provide for additional academic preparation in one or more teaching fields. In such cases, however, undergraduate and graduate courses combined must be at least equivalent to the undergraduate requirements for the degree of Bachelor of Arts in Education in the teaching field concerned.

Programs are normally based upon undergraduate preparation equivalent to the requirements of the degree of Bachelor of Arts in Education (see pages 11-12). Candidates with less professional preparation must make up their deficiencies either prerequisite to or as part of their graduate study.

Each candidate must file in the Office of the Dean not later than one month after admission to the School of Education a program of study approved by his Adviser.

All candidates must take, at one of the designated periods, a professional comprehensive examination which shall take into account the candidate's area of specialization.

PROGRAMS OF STUDY

Administration of Public School Systems

Programs of those interested in the position of school superintendent customarily include courses in General Administration, Supervision, and Administration of a School System. Additional courses are chosen as needed from Adult Education, Curriculum, Elementary Education, Guidance, Public Relations, School Finance, School Law, School Plant Planning, and Secondary Education.

Adult Education

Programs of those particularly interested in the education of adults may or may not include additional teaching-field preparation. In addition to six credit hours of work in Adult Education professional courses may be chosen from Audio-visual Education, Curriculum, Employee Training, Evaluation, Guidance, History of Education, Mental Hygiene, and Philosophy of Education.

Agricultural Extension Education

These programs are designed for those with successful experience in agricultural extension education. Candidates follow *Plan 1*, writing a thesis approved by representatives of the Extension Service of the United States Department of Agriculture. Six credit hours of work, in addition to the thesis, are devoted to agricultural extension education, by special arrangement with the Extension Service of the United States Department of Agriculture. The remainder of the program is planned in accordance with the interests and needs of the candidate and usually includes courses in Supervision, Adult Education, and Secondary Education. Courses in Administration, Curriculum, Evaluation, Group Leadership, Guidance, Personnel Psychology, Research, Speech, and Statistics may also be chosen.

Elementary Education

Programs provide for three fields of specialization in elementary education: Early Childhood Education, The Intermediate Grades, and Elementary School Administration. In addition to graduate courses in these fields programs may include courses in Child Growth and Devel-

opment, Children's Literature, Curriculum, Evaluation, History of Education, Mental Hygiene, Philosophy of Education, Reading, Research, and Speech.

Employee Training

Programs for those interested in the training of employees in business, industry, and government normally include courses in Employee Training and Adult Education. Additional courses are chosen from Audio-visual Education, Curriculum, Guidance, Mental Hygiene, Personnel Psychology, Philosophy of Education, Public Relations, and Techniques of Counseling.

Guidance

Programs for those especially interested in guidance usually include courses in Educational and Vocational Guidance, Techniques of Counseling, Guidance in Secondary Schools, and Occupational and Educational Information. Additional courses frequently chosen include Adult Education, Curriculum, Employee Training, Evaluation, Individual Psychological Testing, Personnel Psychology, Philosophy of Education, Psychological Tests, Secondary Education, and Test Construction.

Physical Education

Programs of candidates who have had undergraduate training in Physical Education may include twelve credit hours of work in Health Education, Physical Education, and Recreation. Four graduate courses: *Problems in Physical Education*, *Problems in Health Education*, *Evaluation in Physical Education*, and *Physical Education for the Atypical*, are offered, two each year in alternate years. Certain undergraduate courses may also be taken for graduate credit. These are available in the areas of Camping, Dance, Physical Education, and Recreation.

As a rule these programs include six credit hours of work in Secondary Education. Additional courses are chosen from Audio-visual Education, Curriculum, Extra-classroom Activities, Guidance, Philosophy of Education, Public Relations, and Supervision.

If *Plan 1* is followed the thesis problem may be from the field of Physical Education.

Secondary Education

Those who desire additional teaching-field preparation may combine advanced subject-matter courses in an academic field with professional courses. Programs usually include six credit hours of work in Secondary Education with additional courses chosen from Audio-visual Education, Curriculum, Extra-classroom Activities, Guidance in Secondary Schools, Philosophy of Education, Research, and Vocational Education.

Programs for those interested in secondary school administration normally include courses in General Administration, Supervision, and Secondary School Management. Additional courses may be chosen from Curriculum, Guidance, Philosophy of Education, Public Relations, Research, School Law, School Plant Planning, and Secondary Education.

ADMISSION

To be admitted to candidacy for the degree of Master of Arts in Education the applicant must: (1) hold a Bachelor's degree from an accredited institution; (2) have an undergraduate quality-point index of 2.50 or above (C + average); (3) have demonstrated a genuine interest in teaching; (4) be in possession of personality traits that give promise of better-than-average success as a teacher.

To be admitted to candidacy in programs designed to prepare for service in guidance and administration two years of successful teaching experience are prerequisite.

PROGRAM LEADING TO THE DEGREE OF DOCTOR OF EDUCATION

The requirements for the degree of Doctor of Education cannot be stated in credit hours, but they consist in general of at least two full years of work beyond the degree of Master of Arts in Education or the equivalent. The programs of study are designed to prepare students for administrative or supervisory positions, the teaching of education in normal schools or colleges, the teaching of an academic subject in schools or colleges, or for specialized types of educational service. The work is given a practical rather than a theoretical bent, and emphasizes the mastery and application of subject matter, both in the study requirements and in the dissertation. Special emphasis is placed upon the professional success of the candidate.

The candidate's program of study depends for the most part upon his previous educational background and his professional objective. Opportunities are provided for study leading to the following professional objectives:

School Superintendent
Secondary School Principal
Supervisor
Director of Guidance

Director of Curriculum Development
Professor of Education
Specialist in Educational Research

QUALIFICATIONS OF THE APPLICANT

The candidate for the degree of Doctor of Education must have completed (1) graduate work in fields prerequisite to his objective, equivalent to that required for the degree of Master of Arts in Education in The George Washington University, and (2) at least three years of successful educational experience.

ADMISSION TO CANDIDACY

To be admitted to candidacy for the degree the applicant must be accepted by the Faculty of the School of Education on the basis of an examination conducted by a committee appointed by the Dean. This examination will usually include the following: (1) a written examination involving problems related to the applicant's background; (2) a scholastic-aptitude test; (3) an oral examination.

CONSULTATIVE COMMITTEE

If the applicant is accepted as a candidate, his consultative committee, in cooperation with the candidate, will (1) determine the candidate's fields of study, in each of which the candidate must pass a written

examination at least eight months before he presents himself for the degree; (2) formulate a list of course requirements and of readings that will assist him in preparing for these examinations; and (3) designate the tools of investigation that will be needed by the candidate in the prosecution of his study. These tools may include one foreign language, or more, statistical methods, historical criticism, or any others considered essential by the committee. An examination in the tools designated must be passed by the candidate before he takes his comprehensive examination.

THE DISSERTATION

When the candidate has satisfied the requirements of his consultative committee, the committee is dissolved. A member of the faculty, in whose field the topic of the dissertation falls, is then appointed to serve as the candidate's adviser on his dissertation and in his field of specialization, and to recommend him to the Dean for the final oral examination when, in his judgment, the candidate's dissertation is acceptable.

Not later than the date specified in the University calendar the candidate shall submit to the Dean of the School of Education four copies of his dissertation—one typewritten original and three legible and complete carbon copies, on official thesis paper—and also a typewritten summary of the dissertation consisting of not more than 2,500 words. Requirements regarding the form of the dissertation are stated in the general catalogue and additional information will be supplied by the Dean.

The successful candidate is required, at the time of the acceptance of the dissertation, to pay a fee to cover the expense of printing the summary.

THE FINAL EXAMINATION

At least three weeks before the degree is to be conferred the candidate must pass an oral examination on his dissertation and on his field of specialization before a committee of the Faculty appointed by the Dean, supplemented by two experts from outside the University appointed by the President. This examination is open to the public and all are privileged to question the candidate. The Dean, or a member of the Faculty designated by him, will preside at this examination.

READING CLINIC

To help children and adults with reading difficulties, the School of Education operates a diagnostic reading clinic. Children may be referred by principals, teachers, or parents. Adults may apply by telephone.

To arrange for a clinical examination of reading status, address The George Washington University Reading Clinic, 720 Twenty-second Street, NW., or telephone NAational 5200, Extension 451, for an appointment. The Clinic is open for appointments Monday, Wednesday, and Friday, from 9:00 A.M. to 12:00 noon.

A complete diagnostic examination usually requires three sittings. When completed, a written report is given and a conference arranged at which disabilities are discussed in detail and suggestions for corrective work are outlined. The fee is \$20.00.

FEES AND FINANCIAL REGULATIONS

By authorization of the Board of Trustees, the following fees have been adopted:

TUITION FEES

For each credit hour for which the student registers (except work taken by a candidate for a Doctor's degree).....	\$12.00
For the degree of Doctor of Education	
For work leading to and including the general examination.....	360.00
For work leading to and including the final examination.....	360.00

ADDITIONAL COURSE FEES

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the term and, unless otherwise indicated, may be defrayed in three payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as are determined by the department concerned.

GRADUATION FEE	20.00
FEE FOR BINDING MASTER'S THESIS.....	4.00
FEE FOR PRINTING AND FILING SUMMARY OF DOCTORAL DISSERTATION ..	50.00

SPECIAL FEES

Application fee, charged all applicants for admission, non-refundable	3.00
Late-registration fee, charged each student who fails to register within the designated period.....	5.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration.....	5.00
Service fee, charged each student for late payment of tuition (see "Payment of Fees")	1.00
Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees.....	5.00
Residence fee, charged each student wishing to maintain "in residence" status during any term of absence from the University or after completion of tuition requirements	12.00
For special physical examination.....	2.00
For examinations to qualify for advanced standing and for each special examination	5.00
For diagnostic reading clinic.....	20.00
Laboratory checkout fee, charged all students in chemistry and pharmacy courses who fail to check out of the laboratory by the time set by the instructor.....	2.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of three certified transcripts of record, if and when desired; (2) the services of the Employment Office; (3) the use of University library facilities, except as otherwise desig-

nated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described in the General Catalogue. These privileges, however, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street, NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each term are due and payable in advance at the time of registration.

In exceptional cases, subject to the approval of the Comptroller, the student may sign a contract for term charges, except for fees payable in advance, permitting payments as follows:

Fall Term.—One third at the time of registration; one third on November 3; one third on December 4.

Winter Term.—One third at the time of registration; one third on March 3; one third on April 3.

A student who fails to meet payments when due, but who pays his fees on or before the tenth day of the month in which payment is due, is charged a service fee of \$1. A student who fails to meet payments by the tenth day of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A suspended student may not be reinstated for the term after two weeks from the date of suspension. Applications for reinstatement are to be made to the dean.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the dean. Notification to an instructor is not an acceptable notice.

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Term.—Withdrawal dated on or before October 31, cancellation of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Winter Term.—Withdrawal dated on or before February 28, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and the course is dropped before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the term for which a registration charge is incurred and in no case will this payment be credited to another term.

Any student in chemistry who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a checkout fee in the amount of \$2. A student who drops a course before the end of the term must check out of the laboratory at the next regular laboratory period.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

All charges for courses dropped without the approval of the dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

NATIONAL SERVICE LEAVE OF ABSENCE FOR STUDENTS

A student who is called into the Armed Forces or who volunteers for service with the Armed Forces, upon application to the dean of his college, school, or division, will be granted "national service leave of absence" from the University under the following provisions:

1. The student must be in good financial standing when his service leave is approved.
2. A student granted service leave will receive incomplete grades in all courses for which he is registered. The student is encouraged to make arrangements with his instructors for completion of his work whenever possible under the Independent Study Plan.
3. A student granted service leave during a term will be credited with tuition payments made during that term prior to the granting of such leave, and upon the student's return to the University this financial credit will be applicable toward tuition for the courses for which he was registered.
4. Service leave continues effective during the first year following the termination of the student's connection with the Armed Forces. The

student may return to the University under the rules and regulations in effect at the time service leave was granted.

5. If any courses for which the student was registered at the time service leave was granted are not offered upon his return, he may substitute comparable courses with the approval of the instructor and the dean concerned. Tuition credit cannot be transferred to courses other than those for which the student was registered when service leave was granted except when courses are substituted as provided above.

COURSES OF INSTRUCTION

EXPLANATION OF COURSE NUMBERS

An odd number preceding the name of the course indicates that the course is offered in the fall term; and an even number, that it is offered in the winter term. The letter "x" following an odd course number (e.g., 295x) indicates that the course, normally offered in the fall term, is given in the winter term. The letter "x" following an even course number indicates that the course, normally offered in the winter term, is given in the fall term.

First-group courses.—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. With the approval of the adviser and the dean, they may also be taken by juniors and seniors. In certain instances, they may be taken by graduate students to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

Second-group courses.—Courses numbered from 101 to 200 are planned for students in the junior and senior years. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the Dean of the School of Education and by the officer of instruction concerned, and when the completion of additional work has been certified by the officer of instruction.

Third-group courses.—Courses numbered from 201 to 300 are planned primarily for graduate students. They are open, with the approval of the officer of instruction to qualified seniors; they are not open to Junior College students or other undergraduates.

INDICATION OF THE AMOUNT OF CREDIT

The number of credit hours given for the satisfactory completion of a course is indicated in parentheses after the name of the course. Thus, a year course giving three hours of credit each term is marked (3-3), and a term course giving three hours of credit is marked (3).

DEPARTMENT OF EDUCATION

Courses offered by the Department of Education are of two types: those designed for the preservice education of candidates and those planned for the inservice education of teachers.

Preservice courses devote two fifty-minute periods a week to lecture and discussion supplemented by a minimum of two hours a week of related field work. A clinical approach to the study of educational

problems is used, lectures and discussions revolving around observed practices.

Inservic courses usually meet only once a week for a two-hour period. Class work is supplemented by extensive reading assignments, the preparation of reports, and field work. A student enrolled in one of these courses should plan to devote not less than seven hours a week, exclusive of class time, to the work of the course.

Ample opportunity is provided to study teaching or administrative problems of special interest. To enable students to consult with instructors regarding individual problems, a conference hour is scheduled immediately before or after the class period.

Only the courses designed to provide professional information and skills are listed below. For courses needed for general education or teaching field preparation, see the general catalogue. In addition to courses offered in the Department of Education a number of professional courses for teachers are offered in the departments of Psychology, Speech, and Statistics. These are listed below together with courses offered by the Department of Education.

The exact hour at which classes will be held is stated only for the fall term of 1949-50. Class hours for courses offered in a later term will be found in the Schedule of Classes for that term.

FIRST GROUP

Education A *Reading Clinic* Hilder and Staff

Diagnosis of reading difficulties; individual or group lessons without academic credit for alexia, dyslexia, and remedial cases. Fee: for diagnosis, \$20; for individual lesson, \$3; for group lesson, \$2.50.

Psychology 22 *Introduction to Educational Psychology* (3) Faith

Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training. Morning. (Also offered 1950 summer term.)

Psychology 22x—same as Psychology 22, but offered fall term. Tues. and Thurs., 6:10 to 7:25 P.M.

Psychology 29 *Child Psychology* (3) Phillips

A genetic approach to the study of the child. Special emphasis is placed on the socialization process, learning, and the child's view of the world. Tues. and Thurs., 6:10 to 7:25 P.M. (Also offered 1950 summer term.)

Psychology 29x—same as Psychology 29, but offered winter term. Morning.

Statistics 53 *Introduction to Statistics in Psychology and Education* (3) Weida and Staff

Sources of data, tabulation, charts and graphs, averages, dispersion, quartiles and percentiles, raw scores and derived scores, profiles, norms and their use, frequency distributions, intelligence and other quotients, reliability and validity of tests, normal curve, correlation, elementary sampling, statistical

error, limitations of statistics. Prerequisite: one entrance unit in algebra. Laboratory fee, \$5. Lecture—section A: Tues. and Thurs., 10:10 A.M.; section B: Mon. and Wed., 7:10 P.M.; laboratory—section M: Mon., 4:10 to 5:50 P.M.; section N: Wed., 4:10 to 5:50 P.M.; section P: Thurs., 4:10 to 5:50 P.M.; section Q: Wed., 8:10 to 9:50 P.M.

Statistics 53x—same as Statistics 53, but offered winter term. Morning and evening sections.

SECOND GROUP

Statistics 104 *Statistics in Psychology and Education* (3) Weida

Advanced study of correlation and frequency analysis, sampling theory, factor analysis, and applications to specific problems utilizing case method of study insofar as possible. Original work is required of each student. Prerequisite: Statistics 53. Laboratory fee, \$5.

Education 109-10 *Learning and Teaching* (3-3) Ruffner

For the general student as well as the prospective teacher. Fall term: nature of learning and teaching approached through the study of actual classroom situations. Winter term: the principles and practices of good teaching. Section A: Wed. and Fri., 10:10 A.M.; section B: Wed. and Fri., 6:10 P.M.; field work (2 hours) to be arranged. (Also offered 1950 summer term.)

Education 111-12 *Elementary School Curriculum* (3-3)

Fall term: language skills—reading, writing, spelling, speaking, listening. Winter term: natural and social sciences, arithmetic. Summer term 1950.

Education 113 *Elementary School Art* (3)

Materials and methods. Tues. and Thurs., 5:10 P.M.

Education 114 *Elementary School Music* (3)

Materials and methods. Tues. and Thurs., 5:10 P.M.

Education 121-22 *Society and the School* (3-3) Jarman, Burnett

For the general student as well as the prospective teacher. Fall term: the local, national, and international roles of education; cooperation of the school with other community agencies. Winter term: organization and operation of schools; principles and functions. Section A: Tues. and Thurs., 10:10 A.M.; section B: Tues. and Thurs., 6:10 P.M.; section C: winter term only, for those in elementary curriculum, Tues. and Thurs., 10:10 A.M.; field work (2 hours) to be arranged. (Also offered 1950 summer term.)

Psychology 121 *Educational Psychology* (3) Faith

Advanced course in Educational Psychology. Open each term on the individual study plan to a limited number of students. Time to be arranged.

Education 123-24 *Reading Problems* (3-3) Hilder

A clinical approach to reading difficulties on elementary and secondary school levels. Sat., 9:10 to 11:00 A.M.

Psychology 129 *Introduction to Counseling and Guidance* (3) Dreese

A survey of the basic principles, techniques, and procedures as applied to vocational, educational, and personal counseling. Tues., 6:10 to 8:50 P.M.

Education 131 *Common Teaching Skills* (3) Root

Course, unit, and lesson planning; homeroom procedures; discipline, clerical routines; activity sponsorship; committee procedures; public relations duties. Section A: Mon., Wed., and Fri., 5:10 P.M.; section B: Mon., Wed., and Fri., 2:10 P.M.; field work (2 hours), to be arranged.

Psychology 131 *Psychological Tests* (3) Hunt

A survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$2.25. Mon., Wed., and Fri., 11:10 A.M. (Also offered 1950 summer term.)

Psychology 131x—same as Psychology 131, but offered winter term. Evening.

†Education 133-34 *Observation and Practice Teaching* (3-3) Root

Education 134, practice-teaching fee, \$8 a credit hour. Admission by permission of the instructor. (Also offered 1950 summer term.) Time to be arranged individually.

Psychology 144 *Personnel Psychology* (3) Mosé

The applications of psychology to personnel work in education, business, industry, and government. Afternoon. (Also offered 1950 summer term.)

Psychology 144x—same as Psychology 144 but offered fall term. Mon. and Wed., 5:45 to 7:00 P.M.

SPECIAL METHODS COURSES

To be elected in the senior year after substantial preparation in the teaching fields concerned. Course requirements and hours of credit vary with license requirements. Practices of successful teachers are studied and actual teaching content as found in current texts and courses of study is reviewed.

Education 136 *Teaching English* (2 to 4) Lumsden

Tues., 7:35 to 9:35 P.M.; field work (2 hours) to be arranged.

Education 138 *Teaching Social Studies* (2 to 4) Root

Mon., 7:10 to 9:10 P.M.; field work (2 hours) to be arranged.

Education 140 *Teaching Mathematics* (2) Weida

Mon., 5:10 to 7:00 P.M.

Education 141-42 *Teaching Art* (3-3) Goodwin

Sat., 9:10 to 11:00 A.M.; field work (2 hours) to be arranged.

Education 144 *Teaching Science* (2 to 4) Rumbough

Wed., 5:10 to 7:00 P.M.; field work (2 hours) to be arranged.

Education 146 *Teaching Foreign Languages* Doyle, Keating
(2 to 4)
Tues., 5:10 to 7:00 P.M.

Education 148 *Teaching Home Economics* (2) Kirkpatrick
Time to be arranged.

Education 150 *Teaching Secretarial Studies* (2)
Time to be arranged.

Speech 175-76 *Speech Correction* (3-3) Pettit
A study of the causes of the disorders of speech with emphasis on methods in diagnosis and treatment of defective speech. Prerequisite: Speech 11 and 101, or permission of the instructor. Laboratory fee: \$3 a term. 175: Mon., Wed., and Fri., 5:10 P.M.

THIRD GROUP

Education 205-6 *The Curriculum* (3-3) Burnett
General principles and practices of curricular development; modern trends and procedures of improvement; group consideration of student problems. Sat., 11:10 A.M. to 1:00 P.M.

Education 209-10 *Child Growth and Development* Eaves
(3-3)
Basic factors in human growth and development and their relation to learning and teaching. Related practical experience in studying children with class analyses of procedures and results. Wed., 7:10 to 9:10 P.M. (Also offered 1950 summer term—Education 209 (3).)

Education 211x *Evaluation in Education* (3) Ruffner
Nature, functions, and techniques. Thurs., 7:35 to 9:35 P.M. (Also offered 1950 summer term.)

Education 213-14 *History of Education* (3-3) Jarman
Fall term: the European backgrounds of American education. Winter term: the evolution of the American school system. Tues., 7:35 to 9:35 P.M.

Education 217-18 *Contemporary Problems in Education* Jarman
(3-3)
Fall term: designed to help students formulate a personal philosophy of education. Winter term: a study of the forces that shape the policies and offerings of the school. Mon., 7:10 to 9:10 P.M.

Education 221-22 *Seminar: Early Childhood Education* Little
(3-3)
Fall term: home backgrounds, nursery school and kindergarten situations. Winter term: primary grades. Fri., 7:10 to 9:10 P.M.

Psychology 223 Seminar: Learning (3)

B. H. Fox

Covers theories of learning. Tues., 7:35 to 9:25 P.M. (Also offered 1950 summer term.)

Education 225-26 Seminar: Elementary Education in the Little Intermediate Grades (3-3)

A comprehensive study of the major problems of the intermediate grades. Summer term 1950.

Psychology 225 Seminar: Mental Hygiene (3)

B. H. Fox

A survey of the recent literature in social psychology and anthropology as they relate to the impact of society on the mental hygiene of the individual. Individual mental health problems are viewed in terms of the social context in which they occur and are treated. Sat., 10:10 to 12:00 A.M. (Also offered 1950 summer term.)

Education 227-28 Elementary Education (3-3)

Burnett

Fall term: discussion of fundamental issues in the light of their historical development, parallel situations in other countries, and current proposed solutions. Winter term: relationships of developments in each instructional area to the fundamental issues. Sat., 9:10 to 11:00 A.M.

Psychology 227 Seminar: Counseling and Guidance (3)

Dreese

Recent developments and current problems in vocational, educational, and personal guidance in various types of agencies with particular reference to education. Prerequisite: educational or psychological measurements. Thurs., 7:35 to 9:25 P.M. (Also offered 1950 summer term.)

Psychology 228 Seminar: Techniques of Counseling (3)

Dreese

Specific types of vocational, educational, and personal counseling problems approached through the case method. Prerequisite: recent previous course in counseling and guidance and familiarity with individual analysis methods. Evening. (Also offered 1950 summer term.)

Psychology 229 Seminar: Occupational and Educational Information (3)

Davis

Designed to acquaint vocational and educational counselors with the basic occupational and educational information necessary in counseling. Sources of data and techniques of collecting, analyzing, and disseminating for purposes of guidance. Wed., 8:10 to 10:00 P.M.

Education 230x Administration of Elementary Education (3)

Burnett

The principal as a school and community leader. Problems of supervision, course of study development, parent relations. Tues., 7:35 to 9:35 P.M.

Education 231 Secondary School Classroom Procedures (3)

Bish, Root

Survey of current classroom practices with particular attention to teaching aids; reviews of recent literature. Tues., 7:35 to 9:35 P.M. (Also offered in 1950 summer term.)

Psychology 231 Test Construction (3)

Hunt

The principles underlying test construction; statistical techniques in the construction, evaluation, and standardization of psychological, educational, and vocational tests. Prerequisite: a course in tests and measurement and a course in statistics. Tues., 7:35 to 9:35 P.M.

Psychology 232 Research: Test Construction (3)

Hunt

Individual projects of construction and evaluation of psychological, educational, or vocational tests. Prerequisite: Psychology 231. Open each term on an individual study plan to a small number of students by permission of the instructor. Time to be arranged.

Education 233 Audio-visual Education (3)

Luecke

Selection and use of audio-visual aids; measurement of materials and equipment. Material fee, \$5. Lecture (2 hours), laboratory (2 hours). Sat., 9:10 A.M. to 1:00 P.M. (Also offered 1950 summer term.)

Education 233x—same as Education 233, but offered in the winter term. Saturday morning.

Psychology 233 Individual Psychological Testing (3)

Phillips

Instruction and practice in giving the Binet Test and the Wechsler-Bellevue Test. Emphasis is placed on testing children and adolescents. Prerequisite: an elementary course in tests and measurements. Material fee, \$2.25. Fri., 3:10 to 5:00 P.M. (Also offered 1950 summer term.)

Psychology 233x—same as Psychology 233, but offered winter term. Afternoon.

Education 247-48 Vocational Education (3-3)

Ruffner, Johnson

Major issues, problems, and trends. Tues., 7:35 to 9:35 P.M.

Education 251 Guidance in Secondary Schools (3)

Brougher

Scope; needs; organization of the program; services to students, the instructional staff, and the administration; personnel needed for the program. Fri., 7:10 to 9:10 P.M. (Also offered 1950 summer term.)

Education 254 The Junior High School (3)

Bish, Root

Purposes; organization; core programs; guidance; developing course of study; extra-classroom activities. Tues., 7:35 to 9:35 P.M. (Also offered 1950 summer term.)

Education 255-56 Secondary Education (3-3)

Bish, Root

Fall term: review of recent literature and practices; particular attention to *Education for All American Youth*, the recent report of the Educational Policies Commission, and *General Education in a Free Society*, Harvard Committee. Winter term: current problems in each of the subject-matter fields. Sat., 11:10 A.M. to 1:00 P.M. (Also offered 1950 summer term.)

Education 259-60 Secondary School Management (3-3)

J. H. Fox

Management planning, execution, and control; criteria of good management; construction of the master schedule; leadership problems incident to the development of new policies and program. Sat., 9:10 to 11:00 A.M.

- Education 263-64 *Employee Training* (3-3) Root
Organization and administration of employee-training programs in accordance with operating needs; orientation, supervisory, and skills training; coordination of training with other personnel functions; evaluation of training. Field work is required. Thurs., 7:35 to 9:35 P.M.
- Education 271 *The American School System* (3) J. H. Fox
Organization of public education; sources of school revenue; influences of national and state agencies; local administrative units; the chief legal controls; criteria of building administration; responsibilities of teachers. Wed., 7:10 to 9:10 P.M.
- Education 272 *The Teacher and School Supervision* (3) J. H. Fox
Nature, organization, human relationships, and techniques. Wed., 7:10 to 9:10 P.M. (Also offered 1950 summer term.)
- Education 273-74 *Administration of a School System* (3-3) Alves, Early, Featherston
A comprehensive survey of the management problems of a beginning superintendent; does not anticipate previous experience as a superintendent. Thurs., 7:35 to 9:35 P.M.
- Education 275 *School Finance* (3) Alves
Educational financial theory, practice, and control, including methods of financing. Fri., 7:10 to 9:10 P.M. (Not offered in 1950-51.)
- Education 276 *Seminar: Public Relations in School Administration* (3) J. H. Fox
Purposes; gathering materials; disseminating agencies; publicity media; public participation in policy-making. (Not offered in 1950-51.)
- Education 278 *School Law* (3) Remnlein
Sources and scope of school law; legal rights and responsibilities of teachers, pupils, and taxpayers. Other legal problems of major interest to the group. (Not offered in 1950-51.)
- Education 279-80 *Adult Education* (3-3) Ruffner
Fall term: nature, extent, and organization of programs in adult education. Winter term: interest, needs, and capacities of adult learners; techniques employed in motivating and directing learning activities. Mon., 7:10 to 9:10 P.M. (Also offered 1950 summer term—Education 279 (31).)
- Education 287-88 *Clinical Study of Reading Problems* (3-3) Hilder
For advanced students. Diagnostic work under supervision in the Reading Clinic. Admission by permission of the instructor. Sat., 11:10 A.M. to 1:00 P.M.
- Education 291 *Planning the School Plant* (3) Hamon
Selection of sites; evaluation of existing buildings; utilization of present facilities; adaptation to curricular needs; building, operation, and maintenance problems. (Not offered in 1950-51.)

Education 293-94 *Research* (3-3) The Staff
Individual research under the guidance of a member of the staff. Program and conferences arranged with an instructor.

Education 295 *Educational Research Methods and Procedures* (3) J. H. Fox
Required of all Master of Arts candidates following Plan 2. Knowledge of elementary statistics required. Tues. and Thurs., 6:10 P.M. (Also offered 1950 summer term.)

Education 295x—same as Education 295, but offered winter term. Fri., 5:10 to 7:00 P.M.

Education 297 *Reading in Education* (1) The Staff
To assist those preparing for the comprehensive examination. No credit toward degree requirements. Wed., 5:10 P.M. (Also offered 1950 summer term.)

Education 297x—same as Education 297, but offered winter term. Wed., 5:10 P.M.

Education 299-300 *Thesis* (3-3) The Staff
Required of all Master of Arts candidates following Plan 1. Time to be arranged. (Also offered 1950 summer term.)

DEPARTMENTS OF PHYSICAL EDUCATION

The following courses are offered by the Department of Physical Education for Men and the Department of Physical Education for Women. Whenever possible the departments offer lecture courses jointly.

FIRST GROUP

43-44 *Techniques of Physical Education Motor Activities* (2-2) The Staff

Fundamental skills, rules, and organization. Locker and towel fee.* \$2 a term. Tues. and Thurs., 1:10 to 3:00 P.M.

45-46 *Methods of Teaching Physical Education Activities for Secondary Schools I* (2-2) The Staff

Methods and materials for teaching (1) recreational dance—folk, square, and social dance; (2) individual and dual sports—tennis, golf, archery, swimming, badminton, bowling. Locker and towel fee,* \$2 a term. Mon. and Wed., 1:10 to 3:00 P.M.

47 *Introduction to Physical Education* (2) Myers

An orientation course presenting the problems of physical education, vocational analysis, scientific foundations, and scope of field. Tues. and Thurs., 11:10 A.M.

* The locker and towel fee is required for registration in one or more of the activity courses.

- 48 *Introduction to Recreation* (2) Myers
The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary; types of leadership. Time to be arranged.
- 49 *Human Anatomy* (3) Tate
The structure of the human body. Basic course for physical education majors. Also open to both men and women not majoring in physical education. Prerequisite: Biology 1-2 or Zoology 1-2. Mon., Wed., and Fri., 9:10 A.M.
- 50 *Kinesiology* (3) Tate
A study of the anatomical mechanism of movement, analysis of the action of muscles in physical education activities. Prerequisite: an approved course in anatomy. Morning.
- 51-52 *Physical Education in the Elementary School* (2-2) Burtner
Physical growth and development of the child and adolescent. Survey of age characteristics and organization of physical education activities for the various age levels in elementary school, playground, and settlement house programs. Methods and materials of tumbling, games, rhythms, and self-testing activities. Tues. and Thurs., 9:10 A.M.
- 58 *First Aid and Care of Athletic Injuries* (2) Myers, Lawrence
Prevention and emergency care of injuries of all types, with special reference to first aid, bandaging, and massage. A practical course. Prerequisite: Biology 1-2 or Zoology 1-2. Afternoon.
- SECOND GROUP
- 103 *History and Principles of Physical Education* (3) Atwell
Survey of history as it relates to contemporary physical education. Study of aims, objectives, and philosophy of physical education. Mon., Wed., and Fri., 9:10 A.M.
- 105-6 *Corrective Physical Education and Physical Examinations* (3-3) Lawrence
Cause and correction of faulty body mechanics, physical examination methods for the diagnosis of postural defects, prescription of exercises and program adaptation. Prerequisite: Biology 1-2 or Zoology 1-2. Mon., Wed., and Fri., 10:10 A.M.
- 109-10 *Leadership Organization in the Intramural Program* (2-2) Krupa
Principles of administration, organization, and supervision of intramural activities in the physical education program of the junior high school, senior high school, and college. Tues. and Thurs., 12:10 P.M.

- 113-14 *Methods and Practice in Teaching Physical Education Activities (2-2)* The Staff
Principles and methods applied to learning and teaching physical education activities. Supervised laboratory. Time to be arranged.
- 115-16 *Methods of Teaching Physical Education Activities for Secondary Schools II (2-2)* The Staff
Locker and towel fee,* \$2 a term. Section A (women): modern dance; team sports—field hockey, basketball, softball, soccer, speedball, volleyball. Afternoon. Section A—(women): Time to be arranged; Section B (men): Sports—football, basketball, baseball, track and field. Mon. and Wed., 1:30 to 3:00 P.M.
- 121 *School and Community Health Programs (3)* Lawrence
Health services, healthful environment, health instruction, sources of material for general health knowledge. Prerequisite: Biology 1-2 or Zoology 1-2. Mon., Wed., and Fri., 11:10 A.M.
- 122 *Methods and Materials of Health Education (3)*
Organization and presentation of health materials for each age level. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 131 *Tests and Measurements in Physical Education (3)* Atwell
Critical survey of tests in physical activities, methods of test construction, elementary statistics. Tues. and Thurs., 8:30 to 10:00 A.M.
- 132 *Camp Leadership (1)*
Survey course in camp counseling. Afternoon.
- 133-34 *Observation and Practice Teaching (3-3)* Atwell, Myers
Assignments are made to schools in Washington and the vicinity. Practice teaching fee, \$8 a credit hour. Time to be arranged.
- 136 *Survey of Dance History and Dance Forms (3)* Burtner
The development of dance from primitive ritual to present day recreational and art forms of the dance. Includes ethnologic dance, practice and discussion of fundamental movement techniques and composition. Evening.
- 138 *Organization and Administration of Physical Education (3)* Atwell, Myers
Organization and administration of physical education programs in elementary and secondary schools and in colleges. Study of plants, fields, equipment, and programs. Morning.
- 151-52 *Group Leadership Activities I (3-3)*
Fall term: groups and their significance, group work principles and methods, professional and volunteer leaders, organization and development programs. Winter term: application to social-recreational activities. 1951-52 and alternate years, evening.

* The locker and towel fee is required for registration in one or more of the activity courses.

- 153-54 *Group Leadership Activities II* (3-3) Foster
 Fall term: organization and direction of physical recreation programs.
 Winter term: organization and direction of special recreational activities, such as arts and crafts, dramatics, group singing, and nature walks. 1950-51 and alternate years, Tues., 7:35 to 9:35 P.M.
- 161 *Community Organization for Recreation* (3) Brightbill
 Resources, principles, and methods in organizing community recreation services. Thurs., 7:35 to 9:35 P.M.
- 162 *Administration and Supervision of Recreation* (3) Brightbill
 Factors and problems in administering recreation including surveys, legislation, program, area, facilities, leadership, finance, and public relations. Evening.

THIRD GROUP

- 211 *Problems in Physical Education* (3) Morgan
 For experienced teachers. Organization, supervision, and curriculum problems growing out of current issues; program planning policies; competition. 1950-51 and alternate years, Wed., 7:35 to 9:35 P.M.
- 220 *Problems in Health Education* (3) Kilander, Maxwell
 Health needs; policies and program planning; use of community resources; promising practices in the field. 1950-51 and alternate years, evening.
- 231 *Evaluation in Physical Education* (3) Phillips
 Planning the evaluation program; review of outcomes; analysis of tests and standards; administration and interpretation of tests; guidance. 1951-52 and alternate years, evening.
- 240 *Physical Education for the Atypical* (3) Morgan
 Adaptations of activities to meet the special needs of students with physical disabilities resulting from such conditions as postural deviations, cardiac irregularities, operations, and poliomyelitis. 1951-52 and alternate years, evening.

SCHEDULE OF EVENING AND SATURDAY CLASSES

FALL TERM 1950-51

Monday Evening 7:10 to 9:10

Education 217 Contemporary Problems in Education
 Education 279 Adult Education

Tuesday Evening 7:35 to 9:35

Psychology 129 Introduction to Counseling and Guidance (T 6:10-8:50)
 Physical Education 153 Group Leadership Activities
 Education 213 History of Education
 Psychology 223 Seminar: Learning
 Education 230x Administration of Elementary Education
 Education 231 Secondary School Classroom Procedures
 Psychology 231 Test Construction
 Education 247 Vocational Education

Wednesday Evening 7:10 to 9:10

- Education 209 Child Growth and Development
- Education 271 The American School System

Wednesday Evening 7:35 to 9:35

- Physical Education 211 Problems in Physical Education

Thursday Evening 7:35 to 9:35

- Psychology 227 Seminar: Counseling and Guidance
- Education 263 Employee Training
- Education 273 Administration of a School System

Friday Evening 7:10 to 9:10

- Education 221 Seminar: Early Childhood Education
- Psychology 229 Seminar: Occupational and Educational Information
- Education 251 Guidance in Secondary Schools

Saturday Morning 9:10 to 11:00

- Education 123 Reading Problems
- Education 141 Teaching Art
- Education 227 Elementary Education
- Education 233 Audio-visual Education (lecture)
- Education 259 Secondary School Management

Saturday Morning 10:10 to 12:00

- Psychology 225 Seminar: Mental Hygiene

Saturday Morning 11:10 to 1:00

- Education 205 The Curriculum
- Education 233 Audio-visual Education (laboratory)
- Education 255 Secondary Education
- Education 287 Clinical Study of Reading Problems

WINTER TERM 1950-51

Monday Evening 5:10 to 7:00

- Education 140 Teaching Mathematics

Monday Evening 7:10 to 9:10

- Education 138 Teaching Social Studies
- Education 218 Contemporary Problems in Education
- Education 280 Adult Education

Tuesday Evening 5:10 to 7:00

- Education 146 Teaching Foreign Languages

Tuesday Evening 7:35 to 9:35

- Education 136 Teaching English
- Physical Education 154 Group Leadership Activities
- Education 214 History of Education
- Education 248 Vocational Education
- Education 254 The Junior High School

Wednesday Evening 5:10 to 7:00

- Education 144 Teaching Science

Wednesday Evening 7:10 to 9:10

Education 210 Child Growth and Development

Education 272 The Teacher and School Supervision

Thursday Evening 7:35 to 9:35

Education 211x Evaluation in Education

Education 264 Employee Training

Education 274 Administration of a School System

Friday Evening 5:10 to 7:00

Education 295x Educational Research Methods and Procedures

Friday Evening 7:10 to 9:10

Education 222 Seminar: Early Childhood Education

Saturday Morning 9:10 to 11:00

Education 124 Reading Problems

Education 142 Teaching Art

Education 228 Elementary Education

Education 233x Audio-visual Education (lecture)

Education 260 Secondary School Management

Saturday Morning 11:10 to 1:00

Education 206 The Curriculum

Education 233x Audio-visual Education (laboratory)

Education 256 Secondary Education

Education 288 Clinical Study of Reading Problems

Degrees Conferred

373

Jones, Compton	D.C.	Polovov, Albert Bernard	Md.
Kane, Frank Michael	Pa.	Reagan, Ralph Clifford	Tenn.
Kaplan, Benram W	N.Y.	Reynolds, David Willmont	D.C.
Kelley, James John Joseph	Va.	Richardson, Henry Ansley	Va.
Kutanawa, Arthur Saburo	Calif.	Rauzelle, Frederick Russell	Va.
Kutler, John Lewis	Miss.	Runkle, Denton William	Va.
Korostoff, Bernard	N.Y.	Russell, James Miller	D.C.
Lango, Alphonse James	Mass.	Schmier, Hilda Emma	Md.
Leckband, Paul	Iowa	Schnapp, Carl Bernard	N.Y.
Leckband, Stanley Martin	D.C.	Selkowitz, Lawrence Emanuel	Mass.
Land, Robert Neal	Va.	Shanks, Oscar Eugene, Jr.	Md.
Lapson, Samuel Wayne	D.C.	Silverman, Norman	Md.
Long, Charles William	Md.	Snyder, Lucille Murphy	D.C.
Maire, Cyril Earl, Jr.	Md.	Sowers, Robert Hauger	Md.
(With distinction)		Steininger, Eugene Beachel	Pa.
Manno, Floyd Augustus	D.C.	Stevens, Alexander Louis	Pa.
Martin, Frank C	Minn.	Stone, Bruce Douglas, Jr.	Tenn.
McCarteen, Sara Kennedy	S.C.	Stovall, Dorothy Ruth	D.C.
McGarrin, James Joseph	Va.	Swain, T. Wallace	South
McKeon, Alfred Jerome	Va.	Swanson, Charles William	Va.
Meservey, Leon	Md.	Swenson, Dale Abbott	Utah
Miller, Richard Eugene	D.C.	Tan, Pui-Men	China
Moore, Jesse Lee	D.C.	Tanneberger, Walter Samuel Herman	Va.
Muel, Solney	D.C.	Titone, Charles F.	N.Y.
Nelson, Robert Ferdinand	D.C.	Tuckman, Charles William	N.Y.
Nemes, Michael Stephen	Mich.	Unzicker, Roy Kenneth	Va.
Nesbitt, Charles William II	N.Y.	Van Brinkle, Robert Dallas	Mo.
Noble, Sheldon Allen	D.C.	Walsten, Carl John Edward	Va.
Olsen, Richard Laonel	N.Y.	Watkins, James Edward	Md.
Owen, George Morgan	Conn.	Weldy, Pauline	Ohio
Paul, Ida Mildred Bishop	D.C.	Willem, Paul Randolph	D.C.
Pape, Robert Bruce	Mo.	Winkowski, Raymond Alfred	N.Y.
Parker, George Alton	N.Y.	Wright, Carney Willis	Tenn.
Phillips, Frederick David	Va.	Yanagi, Wallace Tadao	Hawaii
Pierce, Henry Maurice	D.C.		
	Va.		

FEBRUARY 22, 1950

Abel, Edward	Mass.	Harmstone, Richard Channing	D.C.
Alvise, Oscar Reald	Va.	(With distinction)	
Baker, Charles Clare	Calif.	Henretta, David Howard	W.Va.
Balogh, Aloys Joseph	Pa.	Hoke, John Ray	Md.
Barnett, Charles Maxwell	Colo.	Hollingsworth, William Leon	Mass.
Barron, David	D.C.	Hopper, Thomas Bradford, Jr.	D.C.
Battelloni, Henry John	Mass.	Houser, Herbert Harold	D.C.
Bennett, Joel Richard	Md.	Hudson, Robert Ray, Jr.	D.C.
Berg, Karl Joseph	D.C.	(With distinction—Special honors in Accounting)	
Berkland, Otto Edward	Minn.	Irving, George Timothy	Iowa
Beyer, James Orval	Pa.	Jeffers, John Cordell	Va.
Birke, John Grant	Va.	Kalter, Arthur Martin	N.J.
Clawett, Marshall Dement	D.C.	Kerr, Graham Stuckley	D.C.
Clifford, Marvin Butler	Tenn.	King, Phillip Miskell	N.C.
Cole, Charles Herbert	Ohio	Kirchner, Theodore Edmond	Va.
Dillon, John	D.C.	Kolker, Irvin	D.C.
Dunn, Eugene Francis	S.D.	Kowalski, Fred Herman	Conn.
Ellis, Calvin Warren	Ark.	Krikorian, Gato	N.J.
Estratich, Joseph Anthony	Pa.	(With distinction)	
Evnen, Lee Ellen	Va.	Lancaster, Blake Paul	Md.
Faustman, Donald Milton	Va.	Leonard, Eugene Anthony	Va.
Ferril, Dale Ray	Ohio.	Levin, Henry Max	D.C.
(With distinction)		Liberty, Cyril Jean	D.C.
Fetterhoff, Wallace Kermit	Pa.	Lombardi, Reilly Robert	Ohio
Fleishman, Irving	D.C.	Lynch, Marion Paul	D.C.
Fletcher, Lloyd Lee	Fla.	Lynn, Bernard	D.C.
Fortinberry, George Kellie, Jr.	La.	Malstrom, Robert Andrew	Md.
Fraser, Joseph Drew	D.C.	Mandelstam, Andrew Anthony	D.C.
Gillon, Dale Rhoads	Pa.	Marcuse, Ernest	Mass.
Glassman, Gerald John	N.I.	Mason, Richard Lee	D.C.
Golilberg, Seymour	N.Y.	Moller, Bernard Leo	Iowa
Grimaldi, Fred Joseph	Ohio	Muller, Keith High	Mich.
Groves, Stanley Corley	D.C.	Minasian, George	N.Y.
Haillock, Robert Lewis	Kans.	Monisera, Frank Daniel	N.J.
Hammons, Att Wingfield, Jr.	Miss.		

Morgan, Earl James
 Morris, James Philip
 Murphy, Robert Bernard
 Murray, Charles Ambrose
 Nishimura, George Kazuo
 Nuasbaum, George Leight
 O'Connor, Denis Patrick
 Palmer, Robert Edward
 Patterson, William Amos
 Pence, Thomas Arthur
 Pericles, John
 Peter, Thomas Armistead II
 Puccio, Vincent Angelo
 Remington, Joseph Ioy
 Rexroth, Clarence Dewey, Jr.
 Saylor, James Willis
 Schlemeier, Todd Edward
 Sekimura, Robert Sueo
 (With distinction)

D.C.
 N.C.
 Wis.
 D.C.
 Hawaii
 D.C.
 N.Y.
 Calif.
 D.C.
 Va.
 Pa.
 Ohio
 N.J.
 Ohio
 Pa.
 D.C.
 D.C.
 Hawaii
 Seybert, Harry David
 Shouse, William James
 Shundich, Peter
 Shurtleff, Miller Francis
 Smith, George Francis
 Speaks, James Taylor
 Starna, Henry Carroll
 Stigers, Donald William
 Taylor, Francis Gordon
 Thompson, Russell Claude, Jr.
 Tozier, Alvin Ozro
 Warren, Howard Eanes
 Wellington, Peretz
 Wolfarth, Carlton H.
 Wolfe, Allen Lee
 Wrobel, Joseph Norman
 Zembruski, Bruno John

D.C.
 Ky.
 Pa.
 Utah
 D.C.
 Ohio
 Ky.
 Pa.
 Ga.
 Va.
 Maine
 N.C.
 N.Y.
 Calif.
 Mo.
 N.Y.
 Va.

MAY 31, 1950

Agersborg, James Albert Zahl
 Allen, Jere Mullen
 Anderson, Helen Margaret
 Andrews, Adeline Lovell
 Andrews, Alphonse Michael
 Armenaka, Rita Irene Emmanuel
 Baber, James Clyde, Jr.
 Baldwin, William Augustus
 Beslev, James Joseph
 Berryman, Richard Blaxton, Jr.
 Bittick, Eugene Wyoll, Jr.
 Black, Frederick Laurence
 Booklen, Robert Clark
 Bolton, Vivian Reynolds
 Bonaminio, Alberto Domenico
 Bowman, Donald Hart
 Bramlette, Lee Clinton, Jr.
 Bruce, William Averett
 Buck, Samuel Otho
 (With distinction)
 Cerstvik, Milan Stephen
 Clark, Edward Francis
 Clark, Frances Elizabeth
 Cochran, Douglas McCord
 Cohen, Sheldon Stanley
 (Special honors in Accounting)
 Cohn, Leonard Earl
 Coleman, George Melchiades, Jr.
 Cragoe, John Henry
 Cross, George Franklin, Jr.
 Cunningham, John Edward
 Curley, William Henry, Jr.
 Davis, Thomas Walker II
 Del Grosso, Peter Albert
 Dirladian, Helen
 Doest, Edward Thomas
 Dunbar, John Paul
 Dyck, William Donald
 Ewall, Warren Emerson
 Eilers, James Paul
 Embler, Ralph Edward
 Escobar, Blanca Gloria
 Eskes, James Norman
 Evans, John Penhallow, Jr.
 Eyster, Marguerite Butta
 Fallin, Thomas Lee
 Fisher, John Edward
 Fleisher, Eric Wilfrid
 Freedman, Samuel Sumner
 Freese, Herbert Allan, Jr.
 Fugate, John Paul

Ill.
 Pa.
 Md.
 N.Y.
 Mass.
 Greece
 Ark.
 N.J.
 Pa.
 Va.
 D.C.
 N.Y.
 Fla.
 Pa.
 Ohio
 Tex.
 Tex.
 Okla.
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 N.J.
 Va.
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 D.C.
 D.C.
 Pa.
 Ala.
 D.C.
 D.C.
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 N.Y.
 D.C.
 Kans.
 Ill.
 Md.
 N.Y.
 Puerto Rico
 N.D.
 D.C.
 Va.
 Fla.
 Md.
 D.C.
 Conn.
 N.J.
 Ohio
 Fuller, George Tucker Havemyer
 Furman, Eugene Marvin
 Furman, Larry Paul
 Gallacher, Bernard Francis
 Goldstein, Raymond Norman
 Gottsch, Marie Helene
 Griffith, Shirley Ann
 Haight, Donald James
 Hall, James Granville, Jr.
 Halvatzia, George
 Hart, Nelson Perry
 Hartline, Robert Hind
 (With distinction)
 Hayden, James Howard
 Hayes, Edward Matthew, Jr.
 Heckman, M. J.
 Heller, Norman Harold
 Helzner, Manuel Louis
 Heslen, Francis Charles
 Hoffman, Howard Paul
 Hook, George Oliver
 Hope, Robert Stocks
 Howett, Jay Miller
 Inseini, Hiram Castillo
 James, Paul Marshall
 Janssen, William Joseph
 Johnson, Daniel Lynn
 Jones, Benjamin Perry, Jr.
 Juárez, Joe Angel
 Kay, Marvin Leonard
 (With distinction)
 Kershaw, John Aloysius
 Kahn, Mohammad Karamatulla
 Kingsbury, James Calvin
 Klein, Joseph Siemund
 Koback, John Merriam
 Kriner, George Marion
 Lacovara, Nicholas John
 Lamphiear, Donald Edmond
 Lansing, Edward Watson
 Levy, Lewis Edward
 Lewis, Edwin Newell, Jr.
 Litten, Charles Ernest
 (With distinction)
 Long, Bazel Ellis
 Luxcomb, Charles Edward, Jr.
 Lynch, James, Jr.
 Maggio, Paul Angelo
 Mann, William Elmer
 Manion, Samuel Anthony
 Marclay, Elliott William

D.C.
 D.C.
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 Canada
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 D.C.
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 Md.
 Mo.
 N.Y.
 D.C.
 Ill.
 Va.
 Conn.
 D.C.
 N.Y.
 N.C.
 N.Y.
 D.C.

Marks, Donald	N.Y.	Sebastian, Robert, Jr.	N.Y.
Martin, Ralph Edward	Maine	Sharp, Venda Venell	Va.
May, Barbara	D.C.	Shipp, Charles Kenneth	Va.
McBroom, Janice Koran	Kans.	Simon, Philip David	D.C.
McClure, Rex Clark	D.C.	Simon, Samuel Louis	Mass.
McCord, Franklin Otto	Iowa	Singer, Stanley Irvin	D.C.
McDermott, Jack Chipman	Tex.	Singer, Thomas Eric	Mass.
McKellips, Harold Gilman, Jr.	Calif.	(With distinction)	
McNiff, Philip Aloysius, Jr.	N.Y.	Skinner, Paul Artemus	Mass.
Meroney, Louis Roy	Tex.	Smith, Emery Peter	D.C.
Meyers, Daniel	N.Y.	Smith, Walker William	N.C.
Moren, Clarence Gill	N.Y.	Snyder, Charles Joseph	N.J.
Morris, John Michael	D.C.	Solter, Myron Woodrum	W.Va.
Nacher, Willis Earl	Pa.	Sorell, Gerald Paul	N.Y.
Nahume, Leonard Lee	D.C.	Spence, Charles E., Jr.	Idaho
Nargizian, Edward Areen	N.Y.	Steece, Philip John	D.C.
Newkirk, Roy Francis	N.J.	Summers, Leonard	D.C.
Norman, Daniel Abraham	N.Y.	Sutherland, Julian Hoyt	Ohio
Northrup, Graham Theodore	Va.	Szoka, Charles Eugene	Pa.
Odineal, Mary Louise	D.C.	Taylor, John Henry	Va.
O'Donnell, Francis Joseph	N.J.	Tong, Richard Koon Wong	Hawaii
Ottedahl, Richard Halland	D.C.	Tully, Richard Edward	Ill.
Olsavsky, Steve Anthony	D.C.	VanSlyke, James Kermit	D.C.
Orenstein, Walter Emil	Mass.	Verta, James	N.J.
Patterson, Marilyn Claire	N.Y.	Vogel, George Paulus	D.C.
Pavia, Phyllis Arnett	N.J.	Wagner, Harry Larue	D.C.
Pavia, Joaquin Antonio	N.Y.	Watkins, Henry Lee	Va.
Payne, Bruce McCollum	Va.	Watson, Beulah Elizabeth	Tex.
Perkins, Edgar Madison, Jr.	D.C.	Wells, Richard Glenn	Md.
Persson, Vernon James	Va.	White, Willis Graham	N.Y.
Pittman, Robert Julian	D.C.	Whitney, Joseph Roland	Mich.
Plugge, Kathryn	Va.	B.S. 1945, University of Minnesota	
Pollack, Robert Emmett	Mo.	Whittington, James Gordon, Jr.	N.C.
Porter, Neil Alfred	Md.	Wilson, James Howie	Md.
Preston, Shirley Andrew	Md.	Witham, Robert Carey	Md.
Push, Lindley Coates, Jr.	Wis.	Wofford, Clarence Arnold	D.C.
Rhysburger, Robert Whitman	Nebr.	Wold, Henry Edward	D.C.
Rosakrans, Ruth Isabelle	W.Va.	Zanelli, Alfred	N.Y.
Rose, Amel Edward	Pa.	Zasada, Richard Conrad	Va.
Ruff, Bryson LaMar		Zorn, Otto Godfrey	N.Y.

MASTER OF ARTS IN GOVERNMENT

NOVEMBER 11, 1949

Hashimi, Syed Mohammad Taqi	India	Moe, Donald Jacques	Minn.
A.B. 1937, A.M. 1939, A.M. 1941, Osmania University, India		B.S. 1943, United States Naval Academy	
Helm, Herschel Horace, Jr.	Ky.	Russell, Harry Earle, Jr.	Mich.
A.B. 1948, The George Washington University		A.B. 1947, University of Michigan	
Huang, Shing-Yi	D.C.	Spear, Harvey Milton	Md.
A.B. 1945, Central Institute of Political Sciences		A.B. 1947, Brown University	
Joe, Louisa Anna Maria Josai	Pa.	L.L.B. 1948, Harvard University	W.Va.
A.B. 1946, The George Washington University		Wiseman, Ben Warren	D.C.
Liu, Ho	D.C.	A.B. 1948, West Virginia University	
A.B. 1943, Lingnan University, China		Woodward, Nancy Harek	
		A.B. 1948, The George Washington University	

FEBRUARY 22, 1950

Bandley, Marion Karl	Utah	Davis, John Alexander, Jr.	Calif.
A.B. 1940, Brigham Young University		A.B. 1927, Marshall College	
Barth, Carl Edward	Ohio	A.M. 1931, University of Michigan	
A.B. 1947, The George Washington University		B.S. 1947, M.Fd. 1939, Ohio University	Ohio
Bullockus, Theodore	D.C.	Dolecki, Joseph	
A.B. in Govt. 1949, The George Washington University		R.S. 1949, University of Alabama	China
		Dow, Tsune-I	
		A.B. 1939, National Central University	

Freeman, Mary Blanche A.B. 1944, University of North Carolina	N.C.	Musser, Ella Bitner B.S. 1923, University of Washington	Oreg.
Gordon, Harold Raymond B.S. 1948, Teachers College of Connecticut	Conn.	Northrup, Barbara Winifred A.B. 1937, Elmira College	N.Y.
Jackowski, Aml Walter B.S. 1949, American International College	Mass.	Porter, Charles Williamson A.B. 1948, University of North Carolina	La.
Jenkins, Kempton Boyce A.B. 1948, Bowling Green State University	Va.	Reid, Richard Sterling A.B. 1943, Michigan State College	Va.
McCloskey, Owen Thomas B.S. 1932, Ohio State University	Ohio	Rodgers, Edward Oscar B.S. 1944, University of Arizona	Ariz.
McSoud, Clovis Fred A.B. 1949, The George Washington University	Okla.	Rovner, Louise Miriam B.S. 1934, New Jersey College for Women	N.J.

MAY 31, 1950

Baker, Harry LeRoy A.B. 1947, The George Washington University	Okla.	Laffey, Cyril Joseph A.B. 1949, The George Washington University	Md.
Baumann, Robert Gustav B.S. 1947, University of North Carolina	D.C.	Lanford, Horace Whalen, Jr. A.B. 1948, University of Georgia	Fla.
Beecher, John Joseph A.B. 1930, University of Pennsylvania	Md.	Mansfield, Mae Helen A.B. 1949, The George Washington University	Ill.
Blake, William Lucius A.B. 1949, The George Washington University	D.C.	Meyerins, Catherine Cecelia A.B. 1930, Seton Hill College	N.Y.
Chew, Allen Frank A.B. 1949, The George Washington University	Fla.	Miller, Herman P. B.S. 1942, College of the City of New York	N.Y.
Davis, Winston McStuart B.S. 1947, Georgetown University	Va.	Otto, Ingrid Helgi Elfried A.B. 1941, University of Cincinnati	Md.
DeCamara, Richard Paul A.B. 1949, The George Washington University	Va.	Palta, Hardev Singh A.B. 1937, University of Punjab	India
George, James Barron A.B. 1948, College of William and Mary	Va.	Philipson, Bruce Glueck B.C.E. 1948, Catholic University of America	D.C.
Gillis, Harry Arthur, Jr. A.B. 1942, Ohio Wesleyan University	Okla.	Pitchford, Leslie Lee, Jr. A.B. 1948, Roanoke College	Va.
Houser, Frederick Russell A.B. 1948, The George Washington University	Pa.	Tyson, Jean Carol A.B. 1947, The George Washington University	Fla.
Kavruck, Samuel B.S. 1937, M.S. 1939, College of the City of New York	N.Y.	Windheim, Sandoe A.B. 1948, The George Washington University	N.Y.

THE GRADUATE COUNCIL

DOCTOR OF PHILOSOPHY

NOVEMBER 11, 1949

Anilrod, Benjamin M. B.E.E. 1933, M.S. 1934, University of Minnesota Dissertation: "The Theory of Triple-Dipole Interaction"	Va.	Coberly, James Harold A.B. 1933, A.M. 1948, The George Washington University Dissertation: "The Growth of Nationalism in American Literature, 1800 to 1815"	W.Va.
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FEBRUARY 22, 1950

Bacchus, Habeeb	British Guiana	Reverdin, Daniel Louis	Switzerland
B.S. 1947, Howard University		Diploma as Physicist 1946, Federal	
M.S. 1948, The George Washington University		Institute of Technology, Zurich, Switzerland	
Dissertation: "Functional Activity of the Zones of the Adrenal Cortex as Indicated by Steroid and Ascorbic Acid Histochemistry"		Dissertation: "Electron Optical Explanation of Space Charge in a Cut-off Magnetron"	

MAY 31, 1950

Friedlander, Harold	D.C.	Rasmussen, Wayne David	Va.
B.S. 1934, College of the City of New York		A.B. 1937, Montana State University	
A.M. 1939, The George Washington University		A.M. 1949, The George Washington University	
Dissertation: "Studies in Experimental Infections in Albino Rats and Mice"		Dissertation: "United States Plant Explorers in South America During the Nineteenth Century"	
Rademski, Jack London	Va.		
B.S. 1942, University of Wisconsin			
Dissertation: "The Metabolism and Pharmacological Actions of Lithium"			

RECIPIENTS OF AWARDS

SCHOLARSHIPS

1949-50

- The Byron Andrews Scholarship:* Ann Courtright
- The Emma K. Carr Scholarships:* Albert Morris DuGoff, Garo Krikorian, Charles Ernest Lilien, Samuel John Moffatt, Douglas Joseph Rykhus, Sam Michael Schreiber, Richard Gordon Scott, Julian Howard Singman, Howard Victor Stambler, Myron Bernard Zinn
- The Columbian Women Scholarships:* Norma Evenson, Mary Cecelia Griffiths, Elaine Langerman
- The Henry Harding Carter Scholarship:* Thomas Edward Mutchler, Jr.
- The Maria M. Carter Scholarship:* Solomon Efrem Barr
- The Isaac Davis Scholarship:* Judith Kutz
- The Charles Worthington Dorsey Scholarship:* Ruth Cooper Breslauer
- The Robert Farnham Scholarship:* Natalie Anne Farwell
- The Elma Lewis Harvey Scholarship:* Dorothy Anne Weld
- The High School Scholarships:* Marion Baker, Nina Libertas Bencich, Eugenia Brandenburger, Jeanne Audrey Cleary, Bernice Elizabeth Cohen, John Hamilton Connaughton, Jr., Dorothy Virginia Dulin, Jean Nelson Edgar, Margaret Ann Faulds, Patricia Joanne Fenton, James Evans Forecum, Meredith Hale Gallup, Philip Arthur Gragan, Lou Ann Hall, Jean Doris Hartley, Marjorie Ann Hill, Edward William Hutnir, Joanne Stratford Hyde, Gladys Elizabeth James, Esther Lerner, Albert Lawrence Lloyd, Jr., Ellen Mae MacEwen, Chester Hayden McCall, Jr., James Forbes Merow, Mary Beth Koenig Paul, Richard Livingston Pentecost, Elinor Anne Peterson, Roy George Richmond, Robert Meldrum Riggs, Patricia Anne Saunders, Leon Joseph Schkolnick, Walter Conrad Scott, Joel Selbin, Elizabeth Anne Sheppard, Frank McNaulty Steadman, Jr., Nancy Reynolds Stevens, James Logan Stith, Harry Homer Thayer, Arnold Martin Toxen, Mary Margaret Trail, Edith Rita Venozky, Josephine Ann Walsh, Carl Weber Wernitz, Janet Wildman, Barbara Ann Worley
- The High School Discussion Conference Scholarships:* Margery Peperell Clifford, Gilbert Haring, Lois Mae Wentz
- The National League of Masonic Clubs Scholarship:* George Walton Buckmaster
- The Washington Chapter of The National Society of Arts and Letters Scholarship:* Harriett Virginia Hulfish
- The Newspaper Scholarships:*
The Evening Star: Frederick Adolph de Luna, William Francis Fuchs, Bernard Arthur Goodrich
The Washington Post: John Russell Wiggins, Jr., Frank Jones Woodard
- The Paul Pearson Scholarship:* Peter Van Allen
- The Benjamin T. Pitts Scholarship:* Jean Tully
- The David Spencer Scholarship:* Jean Agnes Miller
- The Student Activities Scholarships:* Raymond Harold Adler, Robert Thomas Allwine, Jerry Angel, Russell Edward Bailey, Urbino Joseph Barreira, Jack Edward Baumgartner, Clarence Edwin Beecraft, Stanley Burak, David Francis

Burke, Charles Edward Butler, Frank Nicholas Cavallo, Arthur Joseph Cerra, Louis Ciarrocca, Jr., Bob Franklin Cilento, Franklin John Close, Frank Edward Continetti, Peter Paul Cordelli, Andrew Nathan Davis, Jr., John Rudolph DeRagon, Clarence Prowell Drayer, Talbot William Dredge, Donald James Druckenmiller, Albert Morris DuGoff, Robert Lawrence Edenbaum, Edward Joseph Edgerton, James England, Joseph Anthony Famulatte, James Francis Fennell, James Joseph Feula, Thomas Stephen Fiyzik, William Raymond Fox, Richard Howard Freed, Henry Waldo Gartin, John Robert Grinnell, Charles Anthony Gunner, Robert Leonard Gutt, Edward Lee Hedin, Kenneth Hirschfield, Howard Paul Hoffman, David Mitchell Howell, Edmund Crump Hughes, William Valentine James, Charles Clifford Jones, Fotis Nicholas Karcusatos, Bernard William Kelly, Arthur Wallace Kennedy, Joseph Gerard Kennelly, Kenneth Jay Kern, James Frederick Kline, Arelis Vahan Kapuyan, Robert Marrero, Joseph Robert Masciarelli, Philip Aloysius McNiff, Samuel John Moffatt, William Alfred Neal, William Vincent O'Regan, Jr., Robert Leslie Parkinson, Chester Joseph Pietras, Seymour Plawsky, James Andrew Regan, Thomas Hooper Rielly, Frank Vincent Rizzuto, Frederick Clarence Samuelson, Kenneth Robert Samuelson, Walter Benedict Savage, Sam Michael Schreiber, George Edward Sennkew, George Fleming Senestack, John Michael Sestakas, Joseph James Shannon, William Miller Shaw, Alan Edward Sherr, Harvey Andrew Shipman, David Hawley Shiver, John Albert Simchenbarger, Lawrence Silverman, Michael Anthony Sisco, Jr., Leonard Small, Robert Allen Summers, William Leo Szanyi, John Thomas Tivnan, Jr., Robert Bernard Walbridge, David Lewis Waldron, George Walley, Jr., Debra Wallace Warner, Jr., Eugene Witkin, John Wesley Wofford, Jr., Jan Wojtowicz, Jr., John Joseph Yednock

The Trustee Scholarships: Viola Antoinette Andolatto, Dorothy Lee

The John Withington Scholarship: Claudia Becchum Chapline

The Ellen Woodhull Scholarship: Judith Kutz

The Xonta Scholarship: Hwei Chen Lu

PRIZES

1949-50

Alpha Chi Sigma Freshman Awards in Chemistry: Charles Martin Aaronson, Leon Joseph Sekolnick, Samuel Peter Favarella

Alpha Chi Sigma Senior Award in Chemistry: Wilbert Joseph Robertson, Jr.

Alpha Kappa Psi Award in Commerce: Robert Ray Hudson, Jr.

American Institute of Chemists Award in Chemistry: Philip Lincoln Hanst

Chi Omega Award in Social Sciences: Jane Kathryn Terrell

John Henry Cozles Awards in Government: Charles Ernest Lilien, Thomas Eric Singer

Dewitt Clinton Croissant Award for an essay on drama or the theater: John Joseph Ford

E. K. Cutter Award in English: Marianna Beulah Amram

Isaac Davis Awards in Public Speaking: Charles Ernest Lilien, Jerome Stanley Washal, William Berkeley Ormond

Delta Gamma Award to that woman member of the graduating class with the highest scholastic standing: Betty Jane Brodnan

Delta Zeta Award in Botany: Gale Smedley Stringham

Ellsworth Award in Patent Law: Vernon Fredric Kalb

Elton Award in Greek: Margaret Abramitis Schreiner

Jesse Frederick Essary Award to that student who has given promise of sound citizenship and ability in "forthright reporting" in student publication: Raymond Lowell Baneroff

Joshua Evans III Memorial Award to that man in the graduating class who has demonstrated his signal ability in the social and political sciences and who has given promise of the interpretation of that ability in good citizenship among his fellows: Jerome Stanley Waeshal

Willie E. Fitch Award in Chemistry: Wilbert Joseph Roberts

Alice Douglas Giddard Award in American Literature: David Spencer Hoopes

Edward Carington Giddard Award in French: Paul Edmond Hebert

James Douglas Giddard Award in Pharmacy: Leon Isadore Drapkin

Morgan Richardson Giddard Award in Commerce: Julian Howard Singman

Gardner G. Hubbard Memorial Award in United States History: Richard Lebrecht

Kappa Kappa Gamma Award in Botany: John Fisher Walton

John Bell Lerner Award to that member of the graduating class of the Law School with the highest scholastic standing: Ruth Cooper Breslauer

John Ordronaux Award to that member of the graduating class of the School of Medicine with the highest scholastic standing: Edwin Charles Wood

Phi Eta Sigma Award to the beginning male student attaining the highest scholastic average in his first full term of work: George Fleming Sengstack

Phi Sigma Kappa Award to the winner in a freshman oratorical contest: Martha Bothwell Trail

Rugles Award in Mathematics: Christopher Fitzsimon Eve

Sigma Kappa Award in Chemistry: Leon Joseph Sekolnick

James M. Bride Sterrett, Jr., Award in Physics: Arnold Martin Toxen

Charles Clinton Swisher Award in History: Harry Hall Taylor

STUDENT ASSISTANTS

JUNE 1, 1949 TO JUNE 1, 1950

Art: Beth Koenig Paul, Gwendolyn Clare Ramsey

Biochemistry: William James Canady, B.S.

Biology: Edward Charles Connelly, Mary Catherine Dreka, Albert William Gannon, James Leon Gargus, Francis Austin Heckman, Stephen Cornwell Hopkins, Stanley Morton Kurtz, B.S., William Everett Maloney, B.S., John Robbins Mohler, Sam Schreiber, Emily Frances Upton, B.S.

Botany: Robert Jack Downs, Edward Haeskeylo, A.B., George Albert Marlowe, Jr., B.S., Caroline Parkinson Miller, M.S., John Gilbert Palmer, Deems Norwood Wiggs, A.B.

Business Administration: Harry Arthur Abramowitz, Ronald McKenzie Alexander, Edmund Brzozowski, William Pryor Bushmizer, Kenneth Seymour Colmen, Warren Emerson Edwall, Lloyd Lee Fletcher, Seymour Goldberg, Nelson Perry Hart, James John Joseph Kelley, Caro Krikorian, Alphonse James Lango, Barbara May, William Howard Paine, Robert Delos Presler, Clarence Dewey Rexroth, Jr., William Howard Scheckel, William Shouse, Luther Earl Smith, Howard Eanes Warren, Benjamin Wostein

Chemistry: Charles Mayo Biller, Floyd Norton Daugherty, John Robert Mazero, Peter Klaus Mueller, Richard Lewis Reeves, Wilbert Joseph Robertson, Murray Spatz, Henry David Weaver, Jr., Richard Herbert Weingrad

Civil Engineering: Rudolph Besier, Harry Bennett Crosswell, Harvey Bernard Crummett, Rea Dalton, Elizabeth Hale Gallup, Konstantinos Karayianis,

- Richard Eugene Koester, Constantine Nicholas Mandragos, John Kinsey McCulloch, Michael Demianos Papanichael, Angeline Pappas, William Carter Riner, Lawrence Schneider, B.S. in C.E., Edward Simonetti, George Frank Tittington, Jr., Henry Weeden
- Economics:* Oscar Roald Alvig, Charles Ellwood Cowell, Jr., A.B., Lilla Burt Cummins, A.B., Walter David Fackler, Miriam Isenman Frechtman, A.B., Paul Abraham Gekker, A.B., Clark Joel, A.B., Julius L. Katz, A.B., Charles Donald Matthews, A.B., Eugene Michael Picciano, A.B., Suzanne Virginia Richards, A.B., Julian Howard Singman, Robert Gay Trumbull, Jr., A.B., Douglas Price Weaver, A.B.
- Education:* Minnie Banks
- Electrical Engineering:* Frederick Hugh Battie, Jr., Dorothy Lee, Willis Vary, Robert Edward Winter
- English:* Zelda Diamond Fichandeler, A.B., Meredith Hale Gallup, Phyllis Bate Weissinger
- Geography:* Thomas Arthur Devan, A.B., Noeth Bolling Gillette, Alexander Gritz, Harland Walter Westermann, A.B.
- History:* Palmer Clark, A.B., Elizabeth Trucks Cole, A.B., Dan Norman Cross, Charles Howard Floyd, Rhoda Golden Freeman, A.B., Ernest William Fry, Dorothea Constance Fryer, Harry Bernard Glazer, Judah Greenzaid, Elaine Mildred Langerman, Thadeus Alphonse Lindner, Carrington Beit McGraw, A.B.
- Journalism:* Anne Mathilde Mattingly
- Mathematics:* Charles Alvin Bass, Ida Edith Hornstein, John Douglas Matheson, B.S., Margaret Herrilyn Mendenhall, Elizabeth Anne Sheppard, Joseph Jay Wolf
- Mechanical Engineering:* Richard Bartik, Gerald Leroy Scott, Richard Gordon Scott, Joseph William Widman
- Pharmacy:* Wilson Kress Bressler, Jack Goldberg, Warren Louis Johnson, William Keahey, Harry George Koustenis, James Ray Litkey, William Gerard Sanders, James Russell Weitzel
- Philosophy:* Selma Thelma Aber, Bernet George Hammel, Werner Strupp, A.B., Harman Lynn Womack, A.B.
- Physical Education for Men:* Howard Boyce, Julius Anthony Famulatte, Arthur Wallace Kennedy, David Parker, Edward Sato, Harvey Andrew Shipman, Julian Stein, Bruno John Zembrzusi
- Physics:* Raymond Westcott Briggs, Robert Franklin Custard, Maryse Helen Delevaux, Robert Jack Downs, Franklin Milton Everett, Paul Emanuel Fischel, John Wesley Kulp, Guy Rodgers Naylor, Jr., James Mahan Reamer, Jr., William Roberson, William Harrison Schultz, Frank Louis Tevelow, John Fisher Walton
- Political Science:* David Barson, Lee Clinton Bramlette, Jr., Theodore Bullockus, A.B., Samuel Cummings, A.B., Kurt DeWitt, A.B., Richard Cranning Harmstone, Eleanor Hoffman, Mildred McDowell, Donald Marshall Myrick, Juell Ness, A.B., Marie Panor, John Randolph Pherson, A.B., Kathryn Plasse, Thomas Eric Singer, Jerome Wagshal, Nancy Hanck Woodward, A.B.
- Psychology:* Doris Blandena Brown, Kathryn Burchard, John Eisele Davis, Jr., A.B., John Ogilvy Duncan, Mary Durham, Homer Eliades, Mary Viola Hall, A.B., Cecil Davis Johnson, A.B., Eva Johnson, Daniel Francis Kelly, Marguerite Amy Mitchell, A.B., William Eugene Montague, Marjorie Isabel Peterson, Leslie Saunders, A.B., Laura Shapiro, Forrest Shearin, Edward Samuel Sithens

Romance Languages: Katherine Jean Ashdown, Shirley Schuyler

Secretarial Studies: Mildred May Luers

Sociology: Marion Epstein, Marjorie Ann Hill, Kathleen Iscri, Barbara Lou Quigg

Speech: Kenneth Folse, John Sterling Johnson, Henry Charles Krebs, A.B., Richard Arthur Norman, Edward Loring Tottle, Janet Wildman

Statistics: Charles Franklin Crichton, Howard Dunn, A.M., Margaret Helen Fox, Donald Edward Lamphicar, William Josselyn Lawless, Jr., Joan Hertenstein Lev, A.B., Hobart Whitten Merritt, Noriar Pahigian, A.B., William Paul Stall-smith

Zoology: Walter Edwin Ahrens, A.B., Solomon Efrem Barr, Rita Marie Bic, Max Eugene Botts, Mildred Ann Campbell, Harry Nelson Carlton, B.S., Ann Court-right, Elgin Adams Dunnington, Jr., Albert Frederick Esch, Richard Henry Hedges, Francis Lincoln Lambert, B.S., Charles Kingsley Levy, B.S., Betty Lou Mann, Charles Edward McCreight, B.S., Barbara Elizabeth Mills, John Elliott Parker, Rudolph Siegfried Scheltema, Charles Lewis Schocket, Lawrence Robert Singer, Charles Harry Thorne, Jr.

STUDENTS REGISTERED

IN THE GEORGE WASHINGTON UNIVERSITY 1949-50

Aaberg, Mildred Dagny LL.B. 1942, Washington College of Law	Wash.	Ackoff, Alexandra Makar A.B. 1938, Wayne University	D.C.
Aarons, Isadore Alfred B.S. 1933, University of Chicago	Ga.	Acquista, Nicolo A.B. 1942, College of the City of New York	N.Y.
Aaronson, Charles Martin	D.C.	Acree, Frances C.	D.C.
Abadjia, Andreas A.M. 1948, University of South Carolina	D.C.	Adair, James Reid	D.C.
Abbe, Mary Hyatt	Md.	Adams, Alton George	D.C.
Abbey, Vincent H. D. A.B. 1947, University of Washington	D.C.	Adams, Edward Paul	Pa.
Abbot, Nancy	D.C.	Adams, Emma G.	Pa.
Abbott, Frank LeRoy A.B. 1939, Central College	Mo.	Adams, Hazel Littlejohn A.B. 1938, Duke University	Va.
Abbott, Mary Lee	Vt.	Adams, Frederick Fowler	D.C.
Abbott, Robert Tucker B.S. 1946, Harvard University	Va.	Adams, George Eugene	Va.
M.S. 1949, The George Washington University		Adams, Harry Wesley	D.C.
Abibul, Charles, Jr. B.S. 1949, Ohio State University	Ohio	Adams, James Ronald	D.C.
Abdel Rahim, Mahmoud Kamel	D.C.	Adams, Jane Marie	Md.
Abel, Edward	Mass.	Adams, Jay Harry, Jr.	N.Y.
Abell, Howard Bernal, Jr.	Pa.	Adams, Josephine Mary	Va.
Abellon, Esther Morina	Cuba	Adams, Marjorie Anne	D.C.
Abelson, Maria Luisa	Cuba	Adams, Mary Kathryn	Va.
Abelson, Allan Joseph B.S. 1949, Temple University	Md.	Adams, Robert Louis A.B. 1949, Washington and Lee University	Va.
Abend, Phillip Gary	D.C.	Adams, Robert Nelson	Va.
Aber, Selma Thelma	N.Y.	Adams, Robert Thomson	N.J.
Aberg, Robert Leonard	D.C.	Adams, Thomas Mershon	Calif.
Aberg, William Arvid, Jr.	D.C.	Adcock, Irma Fay A.B. 1940, Th.B. 1941, Pasadena College	Idaho
Abid, George E.	Wash.	Addis, Richard Barton	Ohio
Abolins, Milda Frieda	D.C.	Addison, Francis Gimwelt B.S. 1947, Washington and Lee University	D.C.
Aboud, Joseph	Ariz.	Adelson, Morton Jackson	N.Y.
Abraham, Abe Samuel B.S. 1938, Westminster College	Calif.	Adem, Martin Lawrence	Va.
Abraham, Albert Frederick	D.C.	Adeval, Anthony Joseph A.B. 1949, Rutgers University	N.J.
Abraham, Rodger Chambers	Md.	Adreksarn, Pramarn	D.C.
Abrahams, William Henry	D.C.	Adkinson, Kathryn Eloise A.B. 1937, University of Illinois	Ill.
Abrahamsen, Joseph Labe	Va.	Adler, Benjamin B.Ch.E. 1937, College of the City of New York	D.C.
Abramowitz, Charles A.B. 1948, LL.B. 1949, The George Washington University	N.Y.	Adler, Irving B.S. 1939, New York University	Va.
Abramowitz, Harry Arthur	N.J.	Adler, Raymond H.	N.Y.
Abrams, Allan Morton	D.C.	Adelson, Roy Edward	Ill.
Abrams, Bernard Weiler B.E.E. 1941, Ohio State University	D.C.	Adelman, Alex Costigan B.S. 1948, Wilson Teachers College	D.C.
Abrams, Edwin Fred	D.C.	Adrian, Donald Keith	D.C.
Abrams, Ida Ullman A.B. 1949, Duke University		Ady, John Hamilton	Md.
Abrams, Yehuda Hillel	Md.	Agaroff, Theodore Daniel A.B. 1949, The George Washington University	Conn.
Abramson, Aaron	N.Y.	Agens, Jeanette Field A.B. 1947, University of Oregon	Oreg.
Abramson, Milton E. B.B.A. 1942, College of the City of New York	N.Y.	Agersborg, Emil Jovce	N.J.
Abushady, Safeya	N.Y.	Agersborg, James Albert	Ill.
Acetura, Emil Vincent	Conn.	Agostorevere, Eugenio	Venezuela
Acvedo, Edith	N.Y.	Agusiewicz, Henry Anthony B.S. 1947, A.M. 1949, The George Washington University	Pa.
Ackerly, Robert Louis	N.Y.		
Ackerman, Clotilda Damian	D.C.		
Ackerman, Harry	N.Y.		

Ahern, Frank Leo	D.C.	Allebach, Arlene	Pa.
B.S. in M.E. 1944, Cornell University		Alleman, Hubert Charles	La.
Ahlfield, George Samuel	Va.	A.B. 1929, West Virginia University	
Ahmanson, Ada Mae	D.C.	Allen, Alice Gieves	Pa.
B.S. 1948, University of Maryland		Allen, Alvah David	D.C.
Ahrens, Walter Edwin	D.C.	Allen, Arthur Slater	D.C.
A.B. 1949, Swarthmore College		B.S. 1949, Georgetown University	
Aiken, William David	Wash.	Allen, Barbara Ellen	Mo.
Ainley, James Edward, Jr.	Md.	Allen, Dan Charles	Ark.
Aires, Francis Leroy	N.J.	Allen, Donald Vail	Ill.
B.S. in B.A. 1948, Georgetown University		Allen, Edward Carlton, Jr.	Va.
Alamo, Juan Rodriguez	Puerto Rico	B.S. 1938, United States Coast Guard Academy	
Alawine, Alton Jackson	Miss.	Allen, Edward Clayton	Md.
Albamonte, Eugene	N.J.	A.B. 1940, Gettysburg College	Va.
Albamonte, Marion Delores	D.C.	Allen, Eileen Denney	
Albanese, Albert Andrew	N.Y.	A.B. 1938, University of Maryland	
Albaugh, Helen Elizabeth	Pa.	A.M. 1949, The George Washington University	D.C.
Albee, Edward Gutemuth	Md.	Allen, Howard Benson	Va.
Alberghini, Thomas Joseph	Md.	Allen, James Morton	
B.S. in Ed. 1943, Holy Cross College		L.L.B. 1939, Washington College	Pa.
Albert, Irvin R.	D.C.	Allen, Jere M.	Md.
A.B. 1936, The George Washington University		Allen, John Joseph	N.C.
Albert, Marjorie Florence	D.C.	Allen, Leon	Va.
Albert, Sterling Hartwell	Va.	Allen, Mabel Randolph	
Albertson, Arthur Grant	Utah	A.B. 1924, University of Richmond	
Albertson, Harold Francis	Va.	A.M. 1949, The George Washington University	Okla.
A.B. 1936, Earlham College		Allen, Meredith Ernest	
Albertson, Marianne	D.C.	A.B. 1937, L.L.B. 1937, University of Oklahoma	D.C.
B.S. 1946, Purdue University		Allen, Nancy Leigh	Va.
Albren, Edward Joseph	N.H.	Allen, Rensbert Gary	D.C.
B.S. in C.E. 1949, University of New Hampshire		Allen, Richard Hiram	N.Y.
Albright, Frank Glenn	W.Va.	Allen, Robert Brooke	D.C.
Alden, Ruth	Va.	Allen, Rosa Jane	D.C.
A.B. 1943, University of the Witwatersrand, Johannesburg, South Africa		Allen, Rose Marie	D.C.
Alderson, Wilbur Stanley	D.C.	A.B. 1947, McGill University	D.C.
Alderton, Rodenick	N.Y.	Allen, Theodore Savalard	D.C.
B.S. 1948, Georgetown University		Allen, Thomas Howard	N.Y.
Aldeizer, Carlton Evans	Va.	Allen, Thomas Joseph, Jr.	D.C.
Aldous, Elaine	Md.	Allen, Waitman Triplett	Va.
A.B. 1947, University of Minnesota		Allender, Thomas	D.C.
Aldridge, Thomas Dale	Md.	Allen, Victor	
Aldrich, Thomas J.	D.C.	A.B. 1940, The George Washington University	N.C.
Ale, Charles William	Va.	Alley, Edith	
A.B. 1943, Hampden-Sydney College		B.S. 1938, Western Carolina Teacher's College, N. C.	Md.
L.L.B. 1949, Washington and Lee University		Allin, Mary Elizabeth	
Alexander, Aaron David	N.Y.	A.B. 1948, University of Wisconsin	Wis.
B.S. 1938, College of the City of New York		Allin, Thomas Gritton, Jr.	
Alexander, Anne Cecelia	Pa.	A.B. 1946, Missouri Valley College	
Alexander, Harold Bell	Md.	B.S. 1942, M.D. 1949, University of Wisconsin	Md.
Alexander, Isabelle Maude	D.C.	Allinger, Dorothy Ann	Pa.
Alexander, Joseph	Va.	Allinger, Helen	D.C.
Alexander, Mae Belya	Calif.	Allison, Horatio	D.C.
Alexander, Marion Thomas	D.C.	Allison, Joan	Ohio
Alexander, Mary Louise	Md.	Allison, Ola Hannah	
A.B. 1946, Western Maryland College		A.B. 1929, Rio Grande College	Md.
Alexander, Norval Dan	Okla.	Allnutt, Benjamin White	
Alexander, Ronald McKenzie	D.C.	A.B. 1941, Western Maryland College	D.C.
Alexander, Roy L., Jr.	N.J.	Allnutt, Ralph Boyley	N.Y.
A.B. 1948, Duke University		Allmont, Rene Charles	D.C.
Alexander, Roy M.	Pa.	Allwine, Robert Thomas	N.Y.
L.L.B. 1941, National University		Almeida, Virnel A.	Md.
Alexander, Vernon Duckworth	D.C.	Almy, Dean Johnson, Jr.	Ohio
Alexiou, Louis	N.Y.	Almy, Donald Comstock	
Alexis, Everett Crispin	D.C.	A.B. 1931, A.M. 1937, Western Reserve University	
Alfere, Robert McGregor	D.C.	M.B.A. 1948, Columbia University	
Alldridge, Alfred Robert	Pa.		

Almy, Helen	Md.	Anderson, Carl Robert	Pa.
Alpar, Faika Patma	D.C.	A.B. 1948, The George Washington University	
Alseger, Leslie Eugene	Minn.	Anderson, Carolyn Grace	Pa.
B.M.E. 1949, University of Minnesota		Anderson, Earl Edward	W.Va.
Alster, Caliste Jay	Ill.	B.S. 1940, A.M. 1949, West Virginia University	
B.S. 1948, Massachusetts Institute of Technology		Anderson, Edward James	N.Y.
Alterman, Toby T.	Va.	B.S. 1947, Siena College	
Altman, Gerald	Mass.	Anderson, George Ross, Jr.	S.C.
B.S. 1943, LL.B. 1949, Boston University		Anderson, George Thomas	D.C.
Altman, Pauline Dorothy	D.C.	Anderson, Geraldine Elizabeth	D.C.
A.B. 1911, Hunter College		Anderson, Harvey Henderson	S.C.
Altman, Verna Pearl	D.C.	B.S. 1941, The Citadel	
A.B. 1947, Washington Missionary College		Anderson, Helen Margaret	Md.
Altmann, Andrew Taylor	Md.	Anderson, Henry Clay	Va.
B.S. 1941, University of Maryland		Anderson, Herbert King	Md.
LL.B. 1948, The George Washington University		Anderson, Jane	Va.
Altmeyer, Anne	D.C.	Anderson, Jane Pamela	Va.
Altmire, Herbert Daniel	D.C.	A.B. 1945, Lawrence College	
Altschuler, Eugene	N.J.	Anderson, Kenneth Arthur	Ill.
Altschuler, Oscar	N.Y.	Anderson, Loretta May	D.C.
Altschuler, Norman	Conn.	Anderson, Nancy	D.C.
Alvey, Ernest Brandon	Va.	Anderson, Nellie Carr	D.C.
LL.B. 1949, The George Washington University		A.B. 1943, The George Washington University	
Alvir, Olav Henry	Va.	Anderson, Nora Agnes	Fla.
Alvir, Oscar Roald	Va.	Anderson, Robert Clinton	Va.
Alvord, Clarissa	D.C.	B.S. 1918, Roanoke College	
Amataykul, Ravi	D.C.	Anderson, Robert Lee	Conn.
Amato, John Ignatius	D.C.	Anderson, Robert Leigh	D.C.
Amato, Philip J.	D.C.	Anderson, Robert Reynolds, Jr.	Va.
Ambedkar, Nalini Krishnarao	India	B.S. 1933, University of Richmond	
A.M. 1945, University of Bombay		Anderson, Roy Winton	Calif.
Amberg, Robert Warren	Ill.	Anderson, Valda Clark	D.C.
Ambler, George Chester	Va.	Anderson, William Abbott	D.C.
B.S. 1940, The George Washington University		Anderson, William Lawrence	Md.
Ambrish, Elaine Doris	R.I.	B.C.E. 1925, Ohio State University	
A.B. 1948, Pembroke College		Anderson, William Walter	Ill.
Amdur, David Morris	Va.	Andes, Paul Gowdy	Fla.
Ames, Barbara Anne	N.J.	Andia, Julian Frank	D.C.
Ames, Midge Elizabeth	Maine	Andolfatto, Viola Antonetta	D.C.
Amidon, Robert Horace	D.C.	Andress, Frank Samuel	Va.
Ammann, Helen Virginia	Va.	Andrews, Adeline Lovell	N.Y.
Ammon, William Bouley	Pa.	Andrews, Alphonse Michael	Mass.
B.S. 1921, United States Naval Academy		Andrews, Anna Vaughan	Calif.
M.S. 1930, Harvard University		Andrews, Lee Austin	D.C.
Amram, David Werner	D.C.	Andrews, Marilyn Brownfield	Va.
Amram, Marianna Beulah	D.C.	Andrews, Melvin Keith	N.Y.
Amster, Morton	N.J.	Andrews, Norman Jacob	Pa.
B.S. in E.E. 1948, Rutgers University		Andrews, Paul Jacob	
Amsterdam, Melvin Lawrence	D.C.	A.B. 1938, Amherst College	
Anagnos, Panagiotis George	Md.	LL.B. 1942, Dickinson College	
Anastasiades, Plato	Ohio	Andrews, Rebecca Elizabeth	D.C.
Anastopoulos, Nicholas A.	Mass.	A.B. 1929, M.S. 1930, University of Georgia	
Anastos, John	N.Y.	Andrews, Thurley Louise	R.I.
Anders, Frank Ward, Jr.	Md.	A.B. 1946, The George Washington University	
A.B. 1940, The George Washington University		Andrews, William Taylor	D.C.
Anders, James Alfred	D.C.	B.E.E. 1944, The George Washington University	
Andersen, Allen Frederick	Va.	LL.B. 1949, Albany Law School	
Andersen, Stephen Foss, Jr.	D.C.	Andrich, Dan John	Minn.
Andersen, Svend Aage	D.C.	Angel, Grover La Marr	N.C.
Anderson, Benjamin Ernest, Jr.	Md.	A.B. 1920, High Point College	
Anderson, Beniah Robinson	Va.	A.M. 1946, The George Washington University	
B.S. 1942, Radford College		Angel, Jerry Irwin	N.Y.
Anderson, Bowman Cowne	Va.	Angel, Nell English	N.C.
A.B. 1946, The George Washington University		B.S. 1941, Appalachian State Teachers College, N. C.	
		Angel, William Irby, Jr.	Va.

Angelaras, James George	D.C.	Armentrout, DeWitt Russell	Va.
Ansell, Jack Robert	N.Y.	Armstrong, Albert Claude	N.Y.
Angello, Dolores Bess	N.J.	Armstrong, Charlotte Orr	Ohio
Angelo, Patricia Wilson	Va.	Armstrong, George Dufl	D.C.
Angle, William Ward	Va.	Armstrong, Henry Jacques	D.C.
Angus, Robert	Va.	Armstrong, Mary Emma	D.C.
Ankers, John Edward	D.C.	Armstrong, Robert Gordon	Calif.
Annis, Elizabeth deCourcy	D.C.	Armstrong, Woodrow Jennings	Okla.
Annis, Helen Woodburn	Md.	Arnald, Rosalie Bryant	D.C.
B.S. 1932, Muskingum College		Arnbarger, Leslie Preston	Ariz.
Aunis, Robert James	Mich.	A.B. 1947, Arizona State College	Va.
Anselmo, Lucy Theresa	D.C.	Arness, John Allan	Va.
Ansher, Harold	N.Y.	Arness, Ruth McCraw	Va.
A.B. 1919, Brooklyn College		Arnett, Marie Mauk	Va.
Ansher, Norton	N.Y.	A.B. in Educ. 1945, Morehead State College, Ky.	Va.
B.E.E. 1949, The George Washington University		Arnett, Rollie Wilson	Mich.
Anstead, Roy James	D.C.	Arnold, Dorothea	N.C.
Anst, Barbara Jean	D.C.	Arnold, John Dunn, Jr.	Va.
A.B. 1948, The George Washington University		Arnold, Kenneth Franklin	Wis.
Antholis, Cleo	D.C.	Arnold, Marjorie Gertrude	Tex.
Anthony, James Nicholas	D.C.	A.B. 1947, Wellesley College	Tex.
A.B. 1948, The Citadel		Arnold, Thomas Oren	Tex.
Anton, Alfred John	Va.	B.S. in E.E. 1944, LL.B. 1949, University of Texas	N.H.
A.B. 1948, University of Missouri		Arnos, Rose Mary	D.C.
Anton, Ruth Martha	Iowa	Aronson, Ellis Smiler	D.C.
Antonelli, Francis Anthony	D.C.	Aronson, Frances Bernice	D.C.
Antoun, Edmond John	Pa.	Aronson, Norman Leonard	D.C.
Anzaldúa, Edna	Tex.	B.S. 1947, Georgetown University	D.C.
Anzaldúa, Faysto	Tex.	Aronson, Sylvan Bernard	Va.
Apkar, Harry Emanuel, Jr.	Va.	Atrants, Iris Nancy	Ohio
A.B. 1948, Lafayette College		Arnick, A. Arlene	Va.
Apkar, Herbert Leroy	D.C.	Arrowsmith, Arthur VonGlentworth	Tex.
Aponick, Joseph Ronald	Pa.	B.S. in Educ. 1942, Edinboro State Teachers College, Pa.	
B.S. in Educ. 1941, Bloomsburg State Teachers College, Pa.		Arroyo, Francisco Hernandez	
App, Oliver Leo	Wis.	A.B. 1948, Hardin Simmons University	Mich.
Appel, James Dunford	Md.	Arsem, Collins	D.C.
B.S. in M.E. 1949, Pennsylvania State College		Arsoy, Orhan	Mo.
Appel, Lila	D.C.	Arthaud, Richard Edward	
Applegate, John Curtis	Ohio	B.S. in C.E. 1944, University of Missouri	Va.
Appleman, Herbert Stanley	Ill.	Arthur, Frank Melvin	D.C.
B.S. 1940, University of Illinois		Arthur, John Joseph	D.C.
M.S. 1947, University of Chicago		Artstein, Denise	Pa.
Applestein, David	D.C.	Artz, Harry Edward	N.J.
A.B. 1949, The George Washington University		Arvanetes, John	Wis.
Applestein, Geraldine	N.Y.	Arveson, Maude Eleanor	
Appuhn, George Gerard	D.C.	A.B., B.S. in Ed. 1925, Lindenwood College	Utah
Apter, Ronald Allen	D.C.	A.M. 1941, Columbia University	Ore.
Aranburu, Cielo Borquez	Peru	Asano, Paul Sachio	
Arango, Hector Ospina	Colombia	Asbury, Glenn Cameron	N.Y.
B.S. 1942, Liceo de la Salle		B.S. 1946, Denver University	
Arango-Vidal, Juan	Puerto Rico	Asch, Mildred R.	N.Y.
B.S. 1949, University of Puerto Rico		A.B. 1948, Hunter College	N.Y.
Arce, Arthur George	N.J.	Aschenbrand, Leonard M.	
Arch, Edward Kenneth	Pa.	B.S. 1947, College of the City of New York	
Archangel, Olivia M.	Pa.	A.M. 1949, New York University	
Archer, Crit Alexander	Miss.		
Arduini, Anthony Joseph	D.C.		
Arduini, Rose Catherine	D.C.		
Arena, Mary Regina	N.C.		
Arfman, Herbert Edward	Ohio		
Argersick, Alexander Nicholas	Md.		
Arglesien, Arthur Robert	Calif.		
Arlotta, Russel Anthony	N.Y.		
Armbruster, Francis Edward	Pa.		
A.B. 1948, The George Washington University			
Armbruster, Ralph Edward	D.C.		
Armenaka, Rita Emmanuel	Greece		

Ash, Hughes Lanier A.B. 1932, North Georgia College	Va.	August, Frank Joseph B.S. 1943, A.M. 1947, The George Washington University	D.C.
Asha, John Michael	D.C.	Augustine, James Julian	Ill.
Ashby, Helen B.S. 1937, Northwestern University	Ind.	Ault, John Miller	Pa.
Ashby, Richard A.B. 1936, University of Florida	Va.	Auriti, Anthony Augustine	D.C.
A.M. 1938, University of North Carolina		Austin, Carroll Wayne	N.C.
Ashby, Wallace A.B. 1947, The George Washington University	D.C.	Austin, Dean Menlo	Idaho
Ashdown, Katherine Jean	Md.	Austin, Edwin Cogswell	Va.
Ashe, Ray Lester	D.C.	Austin, Hampton Lambert	D.C.
Asher, Cleona	Fla.	Austin, Ralph Raymond	Va.
Asher, Sydney Solomon, Jr. B.S. 1933, L.L.B. 1936, University of Pennsylvania	Va.	Austin, Rodney Elmer A.B. 1948, Western Maryland College	D.C.
Ashford, Robert Sidney A.B. 1948, Princeton University	Va.	Austin, Roland M.	Va.
Ashida, James Haruo A.B. 1941, University of Washington	Wash.	Austin, William Wickliffe	D.C.
A.M. 1947, Pennsylvania State College		Auten, Howard Leonidas	Va.
A.M. 1948, University of Chicago		Autio, Ila M.	Va.
Ashley, Robert Fredericke	Tex.	Auvil, Carl Edward A.B. 1938, Berea College	D.C.
Ashmore, Charles DeLoach A.B. 1938, Harvard University	Ga.	Avancena, Manuel Claude	D.C.
Ashton, Rudolph Alexander A.B. 1940, L.L.B. 1947, The George Washington University	Md.	Aven, Arnold R.	Va.
Ashworth, Charles Raymond Ashworth, George Clarke B.S. 1939, Illinois Institute of Technology	Idaho	Avery, John Lawrence B.S. 1917, University of Maryland M.S. 1939, The George Washington University	D.C.
Asin, Hy	N.Y.	Avidor, Eva M.S. 1940, University of Jerusalem	N.Y.
Askew, William Robert	Md.	Avin, Martin B.S. 1934, Brooklyn College	D.C.
Asowitch, S. Gertrude	D.C.	L.L.B. 1937, Harvard University	D.C.
Aston, Martha Lamborn A.B. 1948, College of William and Mary	Va.	Avril, John Jacob B.S. 1930, University of Maryland	Mass.
Atchison, Marguerite A.B. 1936, A.M. 1931, The George Washington University	D.C.	Awramik, Joseph, Jr. B.E.E. 1949, The George Washington University	D.C.
Atkeson, Clarence Lee Conner B.S. 1922, United States Naval Academy	D.C.	Awtry, James Dewey	Va.
Atkin, Harry	D.C.	Axtell, George Clifton	D.C.
Atkins, John Dillard, Jr. B.S. 1940, North Carolina State College	Va.	Ayapa, Cheeyakupwanda Bhimaya	N.Y.
Atkins, Norman Louis	Md.	Aydinian, Richard Thomas	Ill.
Atkinson, Charles Fred A.B. 1948, The George Washington University	Ohio	Aye, Ralph Claxton M.S. 1941, Northwestern University	Colo.
Atkinson, Ethel Kathleen B.S. 1928, Carnegie Institute of Technology	Ohio	Ayers, Arnold Welcome	Ill.
A.M. 1940, Western Reserve University		Ayers, June Elizabeth A.B. 1940, The George Washington University	D.C.
Atkinson, Roderick Dhu	Va.	Ayers, Kingdrel Navarre B.S. 1941, United States Coast Guard Academy	Va.
Atkinson, Wade Hampton	D.C.	Ayers, Richard Fowler	Va.
Attanan, Chinda	Siam	Ayers, Theodore Aley A.B. 1941, University of Virginia	Pa.
Attix, Evelyn Louise	D.C.	Ayers, William Glenn	D.C.
Attiz, Frank Herbert A.B. 1949, University of California	Md.	Aynes, Edith Annette	
Atwell, Horace Leroy	D.C.		
Atwood, Arthur William	Okla.	B	
Aub, David Joseph	D.C.	Babb, Eugene Campbell	Va.
Aubrey, Martha Carrington	D.C.	Babbitt, Bernard Lewis	D.C.
Auerbach, Arnold Jacob B.S. 1940, A.M. 1941, The George Washington University	Va.	Babcock, Margaret Shippen A.B. 1940, The George Washington University	Va.
		Babcock, Violet A. A.B. 1920, Vassar College A.M. 1923, Johns Hopkins University	Pa.
		Babeaux, Kenneth Joseph	Va.
		Baber, Carol Virginia	Ark.
		Baber, James Clyde	D.C.
		Babigan, Janet Ruth	India
		Bacchus, Azeez B.S. 1947, Howard University	

Bacchus, Habeeb	British Quiana	Bailey, William Harris	D.C.
B.S. 1947, Howard University		Bailey, Wilma Alethea	Pa.
M.S. 1948, The George Washington University		B.S. in Ed. 1944, California State Teachers College, Pa.	
Bacchus, Joan Ruth	Md.	Bailey, Wilma Blanche	D.C.
Bachelor, Herbert Worden	Va.	Bain, Cody	Okl.
B.E.E. 1936, Rensselaer Polytechnic Institute		Bain, Robert Francis	N.Y.
Bachawat, Bimal Kuma	India	Bains, George Washington	Va.
M.S. 1948, University of Calcutta, Bengal		B.S. 1924, United States Naval Academy	
Bachrach, Morton W.	Va.	LL.B. 1931, Birmingham Southern College	
B.S. 1947, Roanoke College		Bair, Edward William	D.C.
Backs, Dorothy Marie	Wash.	Bair, William Benton	Pa.
Backster, Grover Cleveland, Jr.	D.C.	Baird, Donald Benson	Pa.
Bacon, George Marion, Jr.	Va.	A.B. 1948, University of Pittsburgh	
A.B. 1949, College of William and Mary		Baird, Keith Dwight	Colo.
Bacon, James Everett, Jr.	Md.	Bassinger, Grace C.	D.C.
Bacon, John George	Wash.	Bakeman, Robert Atherton	Md.
B.S. 1949, Georgetown University		A.B. 1932, Middlebury College	
Bacon, Seward Maddox	D.C.	Baker, Annette Cinn	D.C.
Balanes, William Louis	Va.	B.S. in Ed. 1940, New York State Teachers College, Buffalo, N. Y.	
Baden, Frances DeSales	D.C.	Baker, Arnold Stephen, Jr.	Maine
Bader, Donald Gibson	Australia	Baker, Bobby Gene	S.C.
A.B. 1947, University of Adelaide, S. Australia		Baker, Bonnie V., Jr.	D.C.
Badway, Victor Wolf	D.C.	Baker, Carl Wilfred	Ohio
Baechtold, Arthur Lewis	Va.	B.S. 1948, Ohio State University	
Bagan, Michael	N.Y.	Baker, Charles Clare	Calif.
Bagby, Mary Lawton	Md.	Baker, Dolores Myrna	D.C.
A.B. in Govt. 1945, The George Washington University		Baker, Edward Welch	D.C.
Bagdoyan, Leila Marie	D.C.	Baker, George Sumners	Okl.
Bagley, Edward Joseph	N.Y.	Baker, Gerald Lee	Calif.
Baglin, Joseph Michael	N.Y.	Baker, Glywyn Robinson	Ohio
Bakadar, Suraj Shumshere Jung	India	B.S. in Ch.E. 1948, Purdue University	
H.S. 1944, Cambridge University, England		Baker, Harold Leon	Tenn.
B.S. 1948, Punjab University, India		Baker, Harry LeRoy	Okl.
A.B. 1947, A.M. 1949, Ohio State University		A.B. 1947, The George Washington University	
Bailer, Edmund Felix	Md.	Baker, Jack	D.C.
Bailey, Arthur Duncan, Jr.	D.C.	Baker, James Louis	D.C.
Bailey, Arthur William	Conn.	Baker, Margaret Louise	D.C.
A.B. 1940, The George Washington University		Baker, Marion	Ky.
Bailey, Bertha James	Va.	Baker, Mildred Louise	D.C.
Bailey, Burl L.	Mich.	Baker, Raymond Harold	D.C.
M.S. 1942, Harvard University		A.B. 1940, Western Michigan College	
Bailey, Charles Robert	D.C.	M.B.A. 1949, University of Texas	Ill.
Bailey, Earl Belden	Va.	A.B. 1948, University of California at Los Angeles	
B.F.A. 1928, Yale University		Baker, Richard Brown	R.I.
Bailey, Frank	W.Va.	A.B. 1935, Yale University	
A.B. 1933, Glenville State College		A.B., A.M. 1944, Oxford University	Wash.
A.M. 1940, West Virginia University		Baker, Robert Clifford	
Bailey, Henry Conner	D.C.	A.B. 1948, University of Minnesota	Pa.
Bailey, James Edwin	Minn.	Baker, Waldon Lee	Va.
B.S. 1941, University of Minnesota		Baker, William Albert, Jr.	Va.
LL.B. 1947, Georgetown University		Baker, William Clinton	Ill.
Bailey, Joseph Fortune	Tenn.	Baker, William Harold	N.J.
Bailey, Kenneth Alexander	N.C.	Bakker, Cornelis Johannes	Mass.
Bailey, Louisaine	Utah	Bakon, Frederick Joseph	Pa.
Bailey, Margaret Allison	Mo.	Balaker, Basil Charles	Va.
A.B. 1949, The George Washington University		Balavage, Albert Alphonsus	
Bailey, Margaret Lucille	D.C.	B.S. 1947, University of Pennsylvania	N.J.
Bailey, Marguerite Evelyn	Va.	Balcerzak, Henry R.	Mich.
Bailey, Mildred Pauline	Md.	Balczak, Elizabeth Jane	Va.
B.S. 1948, Wilson Teachers College		Baldauf, John Augustine, Jr.	D.C.
Bailey, Owen Walter	D.C.	Balderson, Leroy Robert	Pa.
A.B. 1948, Colby College		Baldrick, Olga Turansy	D.C.
Bailey, Russell Edward	Ind.	Baldrige, Emily	
		A.B. 1936, DePauw University	

Baldrige, Reid A.B. 1948, The George Washington University	D.C.	Baratta, James Carol Baratta, Michael Vincent A.B. 1949, Columbia College	Md. N.Y.
Baldwin, Charles Adams	Md.	Barber, Alvin Thomas B.S. 1931, Susquehanna University	D.C.
Baldwin, Charles Crittendon A.B. 1949, St. Johns College, Md.	Md.	Barber, Charles Farmer	Fla.
Baldwin, Don Mervin	Mich.	Barber, Frederick Willard A.B. 1941, The George Washington University	Calif.
Baldwin, Robert Buckingham	N.J.	Barber, Lloyd Morris	D.C.
Baldwin, William Augustus	N.J.	Barbera, Anthony Ferdinand	Md.
Balfour, Don Arthur	D.C.	Barberena, Gonzalo Enrique	D.C.
A.B. 1945, The George Washington University		Barberio, Joseph Roland B.S. 1945, M.D. 1947, University of Chicago	Pa.
Balian, Berge	Syria	Barbieri, Louis Joseph B.B.A. 1947, College of the City of New York	N.Y.
B.S. 1943, College of St. Joseph, Syria		Barbour, George Lane A.B. 1949, Harvard University	Minn.
Balian, Zareh	D.C.	Barbour, Mary Jane A.B. 1946, The George Washington University	Va.
Baling, Richard King	Va.	Bardwell, Chester Loomis	Mass.
Balish, Nicholas John	Va.	Barefoot, Julius Jackson	N.C.
Balkany, Robert Thomas	France	Barefoot, Verna Young B.S. 1938, University of Cincinnati	N.C.
Ball, Charles Emmet B.S. 1949, The George Washington University	D.C.	Barefoot, Verna Young M.S. 1945, University of Chicago	
Ball, Douglas B.E.E. 1943, Colorado School of Mines	Colo.	Barezkofsky, Frances A.B. 1948, The George Washington University	D.C.
Ball, James Arthur	Mo.	Bargat, John Raymond	Fla.
Ball, Joseph James	Md.	Barber, Herman H. A.B. 1937, Harvard University	Mass.
Ball, Marilyn Alice	S.C.	Barth, Pickard Fowler	Va.
Balla, Michael Philip A.B. 1949, The George Washington University	Pa.	Barthansen, Alfred Frederick, Jr.	D.C.
Ballance, James Orlan	Ill.	Barba, Timothy George	N.M.
Ballard, Carl Clive	Ohio	Baringott, Jeanne Frances B.S. 1947, Pennsylvania State College	Pa.
Ballard, Jennings Fletcher A.M. 1947, Columbia University	Va.	Barish, Benjamin J. B.S. in F.E. 1946, Illinois Institute of Technology	Mich.
Ballard, Ralph Campbell	D.C.	Barish, Joseph	Pa.
Ballenger, Claude Newton, Jr. A.B. 1948, University of Virginia	Va.	Barker, Hildred Agnes B.S. 1944, Mary Washington College	Va.
Ballenger, Maxine Miley	Vt.	Barker, Joseph C.	Okla.
Ballentine, John Jennings B.S. 1917, United States Naval Academy	D.C.	Barker, Robert Clifford B.S. 1949, Rider College	Pa.
Ballentine, Margaret Hilda	S.C.	Barkley, Helen Carlson	Va.
Balli, Carl Eugene	Fla.	Barkley, Anne Marie A.B. 1941, New York University	Md.
Balling, John Carter B.S. in Eng. 1948, The George Washington University	D.C.	Barkman, William Ernest A.M. 1942, Columbia University	
Balou, Arthur Willis	D.C.	Barkin, Gilbert Donald B.S. 1949, The George Washington University	D.C.
Baloga, Aloys Joseph	Pa.	Barkow, Mearl Marietta	D.C.
Balogh, Stephen Elmer, Jr.	D.C.	Barlow, Bill Ray	Minn.
Balukonis, Marie Elizabeth	D.C.	Barlow, Ivan Hugh	Ohio
Balzer, Michael Peter	Md.	Barlow, Shirley	D.C.
Banagan, Civita Ann	Ind.	Barshv, John Glennon A.B. 1944, Middlebury College	Mass.
Bancroft, Raymond Lowell	N.Y.	B.S. 1944, Massachusetts Institute of Technology	
Bandley, Marion Karl A.B. 1940, Brigham Young University	D.C.	Barnard, Richard Paul B.S. in M.E. 1947, University of Michigan	Mich.
Bandy, Alva Harlan B.S. 1947, Kansas State College of Agriculture and Applied Sciences	Kans.	Barnekov, Christopher Conkling	Va.
LL.B. 1949, Washburn Municipal University of Topeka		Barnes, Bernice O.	W Va.
Bangle, Lester Wayne	D.C.	Barnes, Clarence Adam	Md.
Banker, Robert Darrell A.B. 1949, The George Washington University	Calif.		
Banko, Andrew	Pa.		
Banko, Minnie B.S. 1936, Madison College	D.C.		
A.M. 1947, The George Washington University			
Banks, Albert Peter	Calif.		
Banner, Adam Paul A.B. 1949, Evansville College	Ill.		
Barakat, Diawar Hassan	Egypt		

Barnes, Donald Bentley	Va.	Barry, Gerard Stephen	D.C.
Barnes, Donald Frederick	D.C.	B.S. 1948, Georgetown University	Va.
Barnes, Donald William	Va.	Barry, James Vance	Va.
Barnes, Duard Roof	Ariz.	Barry, John James	D.C.
A.B. 1949, The George Washington University	D.C.	Barry, John Patrick	D.C.
Barnes, Evelyn T.	D.C.	Barry, John William	D.C.
A.B. 1911, Lynchburg College	D.C.	Barry, Joseph Robert	Va.
Barnes, Helen Louise	Md.	Barry, Madeleine Barrymore	Va.
Barnes, Howard Emerson		Barry, Mary Jane	
B.S.E. 1945, University of Florida	Va.	B.S. 1926, M.S. 1927, Boston Teachers College	Pa.
Barnes, Joanne Louise	Md.	Barry, Thomas Anthony	Va.
Barnes, John Lockard		Barsigian, Flora Marie	Va.
A.B. 1948, Western Maryland College	D.C.	Barsky, Cyril	D.C.
Barnes, Kenneth Clark	Ill.	Barson, David	Ohio
Barnes, Snell Hardin	Va.	Bartch, Carl Edward	
Barnes, Virginia Belle	N.Y.	A.B. 1947, The George Washington University	Mass.
Barnett, Abby Joy	Colo.	Bartelloni, Henry John	Pa.
Barnett, Charles Maxwell	D.C.	Barth, Leah Wanda	
Barnett, Helen McConnell		B.S. 1947, Bloomsburg State Teachers College, Pennsylvania	N.J.
A.B. 1947, The George Washington University	D.C.	Bartik, Richard	Va.
Barnett, James Encl	D.C.	Bartimo, Frank Antonio	
Barnett, Robert Alexander		A.B. 1941, Clark University	
A.B. 1949, The George Washington University	Colo.	L.I.B. 1944, The George Washington University	D.C.
Barnett, Thomas Mather	D.C.	Bartkowski, Adam Anthony	Ohio
Barnhart, Arthur Gooding	Md.	Bartkowski, Florence	Pa.
Barnhart, C. Paul		Bartles, Emily May	W.Va.
A.B. 1910, Lebanon Valley College		Bartlett, Dorsey Joseph	D.C.
M.S. in Ed. 1943, University of Maryland	Va.	Bartlett, Henry A.	Md.
Barnhill, William James	Va.	Bartlett, John Stanton, Jr.	
Barnsley, Richard Souder	Va.	B.F.E. 1947, The George Washington University	Mo.
Barnthouse, Darwin Collier	Va.	Bartlett, William Harold	
Barnum, John Wallace	Conn.	A.B. 1949, Drury College	D.C.
A.B. 1949, Yale University	N.Y.	Bartley, Richard Harry	Fla.
Baroff, George Stanley		Bartmes, Russell	
B.S. 1948, The George Washington University	D.C.	B.S. 1948, United States Naval Academy	La.
Baron, Florence Catherine	Pa.	Bartmess, Elliot Sherman	D.C.
Baronitis, Madeline Dorothy	N.J.	B.S. 1947, Louisiana State University	
Barr, Joseph Frederick	Pa.	Barton, Charles Edwin	
Barr, Marie Ann	D.C.	A.B. 1934, Juniata College	
Barr, Solomon Efreem	N.J.	A.M. 1949, The George Washington University	D.C.
Barrasso, Joseph Alfonso	Mass.	Barton, Fred Hubert	Va.
Barreira, Urbino Joseph	D.C.	Barton, Victor Ewine	D.C.
Barrett, Annabel Lombard		Baruch, Blanche Josephine	N.Y.
A.B. 1927, Barnard College	D.C.	B.S. 1941, Wilson Teachers College	
Barrett, Beverly Mae		Baruch, Maurice Jacques	
A.B. 1949, The George Washington University	Va.	B.S. 1935, College of the City of New York	D.C.
Barrett, John Francis	D.C.	Baruchin, Belle	D.C.
Barrett, Millicent	Ga.	Baruchin, Joan	Md.
Barrett, William Harbour	D.C.	Barwick, Joel Richard	D.C.
Barrick, Donald Michael	Conn.	Barwick, Leonard	Pa.
Barrington, Oscar Dewey	Fla.	Basarab, Stephen	D.C.
Barrington, Ruth Maguire		Baudelkian, Edward Albert	Va.
B.S. 1942, Florida Southern College	Pa.	Busham, Anne Layton	Va.
Barrison, William John		Basham, Frances Alma	D.C.
B.S. 1946, East Stroudsburg State Teachers College, Pennsylvania	Va.	Basil, Mario E.	Pa.
Barron, Edwin Selwyn		Basile, Anthony Stephen	Pa.
A.B. 1949, College of William and Mary	Fla.	Baskin, Alan Irwin	Tex.
Barron, Louise Irene	D.C.	A.B. 1949, Pennsylvania State College	
Barron, Norman Eugene	Pa.	Baskin, James Dollar	
Barron, Paul Jerome	N.C.	B.S. 1946, United States Naval Academy	D.C.
Barrow, Claude Arnold	Ky.	Baskin, William Maxwell	D.C.
Barrow, Edwin Bixler	Md.	Bass, Charles Alvin	
Barrow, Samuel Wheeler, Jr.	Md.		
Barry, Clarence James			

Bass, Charles White A.B. 1949, The George Washington University	Tenn.	Baxter, Charles Sayre, Jr. Baxter, David Louis A.B. 1937, St. John's University	Va. Md.
Bass, Marvin William A.B. 1948, The George Washington University	Pa.	Baxter, John Elston Baxter, Maude Neilson Bay, Paul Georgeoff	Md. Pa. Ill.
Basta, John William Bastian, David Charles A.B. 1948, University of Maryland	D.C. D.C.	Bayer, Jacob Weller Bayer, Ralph Robertson B.S. 1945, Ohio State University	Mo. Va. Md.
Baskowski, Thomas Richard Batalo, George Batchelor, Eileen	N.J. W.Va. D.C.	Bayles, Barney Elshia Bayles, Sutton Fielding Bayliss, Richard Norman	Md. Mo. N.J.
Bateman, William Raphael Bates, Barbara A.B. 1947, Barnard College	D.C. Va.	Baxol, Permelia Burgess Baxton, Harry Bayreuther, Florence Elizabeth	Va. Va. Md.
Bates, Frederick Leroy A.B. 1949, The George Washington University	Va.	A.B. 1939, Hartwick College Beach, David Jerome	Md. Va.
Bates, Ward Pendleton A.B. 1939, Trinity College	Md.	Beach, George R. Beach, Kenneth Herbert	Ohio Va.
Bathe, Orville Houston A.B. 1948, Yale University	D.C.	Beach, Lillian Estelle Beacham, Samuel Timothy, Jr. Beahon, Louise Dolores	D.C. D.C. N.Y.
Bathory, Joseph Patrick Bathin, Josephine Batley, Bevelley Anne A.B. 1949, The George Washington University	Ill. N.Y. Va.	A.B. 1945, Nazareth College Beale, Edgar Joseph Beale, Thomas William, Jr.	D.C. Ky. Md.
Batson, Clifton Jenks Batson, Donald Purdy Batson, Russell Dean	N.C. D.C. D.C.	Beall, Harry Spurgeon Beall, Hazel Rachel Beall, John Nelson, Jr.	W.Va. D.C. Mont.
Battani, Victor Batten, Hugh Nash Battin, Barbara Frances	Calif. W.Va. Mont.	Beard, Elwood Leroy, Jr. Beard, Richard Warfield Beard, Robert Hardy	Va. Va. Md.
Battin, James Franklin Battista, Dominic Paul Battle, Frederick Hugh, Jr.	Mont. Pa. Va.	Beardmore, Walter Harvey Beardsley, James Henry Beards, Edwin Cole	N.Y. N.Y. Mont.
Battel, Ellis Eugene Bawcom, Howard Heath Bayer, Celeste	Pa. D.C. D.C.	B.S. 1949, Georgetown University Beasley, Channing Ernest Beasley, Clarence Burroughs	Ill. N.C. Tex.
Bayer, Frederick Albert Bauer, Hugh Bernard Bauer, John Joseph Ph.B. 1925, Brown University	D.C. N.J. Mass.	Beasley, Derwood Marice Beasley, Jess Lee A.B. 1936, Phillips University M.S. 1941, University of Oklahoma	Va. Va.
Bauer, Joseph Tucker Bauer, Mary Graybill Bauerschmidt, George William, Jr.	Tenn. Md. Md.	Beasley, Naomi Hubert B.S. 1949, Stephen F. Austin State College Beattie, Edward James	Va. D.C. Va.
Bauers, Frank William, Jr. Baughman, Kenneth Owen Baughman, Pamela Ruth	Tex. Va. Md.	Beatty, Alvin M. Beatty, Dorothy Marie B.S. 1944, Tusson State Teachers College, Maryland	D.C. Md.
Baughnigh, William Cooper, Jr. B.S. 1942, University of Virginia	D.C.		
Baum, Norman A.B. 1948, Bucknell University	Pa.	Beatty, Eleanor A.B. 1943, Bryn Mawr College	D.C. Va.
Baum, Stanley Harold Bauman, Carl Robert Bauman, Richard Joseph	D.C. S.D. D.C.	Beatty, George Calvin Beatty, Harry Bartton A.B. 1948, The George Washington University	Va. Va.
Baumann, Edward Norman Ralph Baumann, Robert Cole B.S. 1947, University of North Carolina	N.Y. Va. D.C.	Beauchamp, Gerson Eli A.B. 1943, University of Puerto Rico Beaver, Carol Westbrook	D.C. D.C. Va.
Baumgardner, Alice Miles A.B. 1948, Mary Washington College Baumgardner, Fanning Miles B.S. 1943, Virginia Polytechnic Institute	Va. Va.	Beavers, Anna Matting B.S. 1943, Radford State Teachers College, Va. Beavers, Virginia Lee	Vt. D.C. Ind.
Baumgarten, Stephen Harvey Baumhammer, Jack Edward Baumholtz, Herman	N.Y. D.C. D.C.	B.S. 1945, Indiana University Bechtoldt, Cletus Joseph Beck, Herbert Valentine	Ill. Va.
Baumoth, Leonard Arthur Bausch, Robert Lee Bausell, Charles William Bausell, Martha Elizabeth	D.C. Mo. Md. D.C.	Beck, Hugo Michael Beck, Iris Emma Beck, John Albert A.B. 1949, University of Tulsa	D.C. Minn. Mo.

Beck, John Edward	Iowa	Beigel, Robert Joseph	Md.
B.S. 1948, The George Washington University		Beikstein, Christian William	D.C.
Beck, John William	Pa.	Beimford, Louis A.	Ohio
Beck, Mary Elizabeth	Va.	B.S. 1948, Miami University	Va.
Beck, Orville Lee	Calif.	Beiro, Alexander Aloysius	R.I.
Beck, Roberta Laura	N.J.	Beiser, Jennie Elizabeth	Md.
Becker, Eugene Joshua	N.Y.	Belcher, Francis Charles	D.C.
Becker, Joseph	D.C.	Bellevue, Raymond Fulton	S.C.
Becker, Joseph Agula	D.C.	Belk, Harry Clinton	
Becker, Martin Stanley	D.C.	A.B. 1943, Wofford College	N.Y.
Becker, Paul Erdman, Jr.	Conn.	Bell, Alfred Michael	
B.S. 1938, United States Naval Academy		B.S. 1949, Niagara University	Va.
Becker, Robert Raymond, Jr.	Md.	Bell, Brian	
Beckham, Caroline Walter	S.C.	A.B. 1949, Washington and Lee University	Va.
A.B. 1946, University of South Carolina		Bell, Charles William	Md.
Beckler, David Zander	Va.	Bell, Colley Wood, Jr.	
B.S. 1946, University of Rochester		A.B. 1947, Princeton University	Va.
LL.B. 1944, The George Washington University		Bell, Daniel Harry	D.C.
Beckler, Seymour	D.C.	Bell, David Eugene	Ohio
Beckman, Gordon Walter	N.Y.	Bell, Edward Leroy	
Beckman, Robert Francis	D.C.	B.S. in M.E. 1946, Illinois Institute of Technology	Mich.
Beckman, Seymour Ames	N.Y.	Bell, Ester Stuart	Utah
Beckner, Charles Douglas	Va.	Bell, Eugene Glen	Va.
Beckwith, Marion Casey	Md.	Bell, Forrest Horatio	Ala.
B.E.E. 1948, Rhode Island College of Education		Bell, Frances Louise	
Beckwith, Thomas Larson, Jr.	N.J.	B.S. in Ed. 1938, University of Alabama	D.C.
Beckwith, Clarence Edwin	Md.	Bell, George Brooker	
Bedell, Donald Williams	D.C.	B.S. 1936, United States Naval Academy	D.C.
A.B. 1948, DePauw University		Bell, Gerald Irwin	Va.
Bedell, Rachel Ellen	D.C.	Bell, Ivan Francis	D.C.
Bedient, Harold Arthur	Ill.	Bell, James Malone	
Bednatz, Stanley Peter		A.B. 1945, University of California	Utah
Beebe, John Elliott, Jr.	D.C.	Bell, Jay Richard	D.C.
A.B. 1917, University of Wichita		Bell, Jean Alice	Va.
Beebe, William Bovell	Kans.	Bell, Joseph Edison	D.C.
A.B. 1946, The George Washington University		Bell, Joseph Thomas	D.C.
Beebe, William Dow	D.C.	Bell, Katherine Ann	Md.
Beecher, John Joseph Michael	Va.	Bell, Mary Lou	Va.
A.B. 1919, University of Pennsylvania	Md.	Bell, Patricia Nan	D.C.
Beecher, Virginia Brian		Bell, Rollin Meredith	Va.
Beeman, Jean Margaret	Va.	Bell, Walter Fuller, Jr.	Md.
A.B. 1946, University of Richmond	Md.	Bell, William Salisbury	D.C.
Beery, Robert Eugene	Ky.	Bell, William Warren	
Beer, Gailbe	Pt.	A.B. 1949, Haverford College	D.C.
Beers, John Sturges	D.C.	Bellak, Joseph Michael	D.C.
Beers, Stephen Lee	Md.	Ballamah, Frederick Joseph	
Beery, Ronald Dale	D.C.	A.B. 1949, The George Washington University	Ohio
Beese, Edward Thomas	Greg.	Bellamy, William Edward	N.Y.
Belachia, Romolo Richard	Mass.	Belardo, Michael	D.C.
Bennett, Helen Louise	Pa.	Beltas, Ralph A.	Md.
Besley, James Joseph, Jr.	Pa.	Bellerille, Robert Chambers	Va.
Besley, Joseph Thomas	D.C.	Bellomy, Bruce Ben	N.Y.
A.B. 1936, Furman University		Belmont, Mary Louise	Va.
A.M. 1948, Columbia University		Belmore, Daniel A.	D.C.
Bernicke, Certe Margaret		Beloff, Abraham Philip	D.C.
B.S. 1949, St. Joseph's College	D.C.	Belt, Alnora Mae	D.C.
Belt, Philip Carlisle, Jr.	Iowa	Belt, Charles Vernon	D.C.
Belin, Margaret Mary	D.C.	Belt, Lloyd Kenneth	Md.
A.B. 1938, Hunter College		Belt, Osborn S.	
A.M. 1941, Columbia University		A.B. 1943, Allegheny College	D.C.
Behane, Mary Josephine	Pa.	M.C.S. 1947, Dartmouth College	W.Va.
A.B. 1922, Seton Hall College		Beltrana, Maria-Cristina	D.C.
Behling, Warren Edward	Va.	Beltz, Joseph Francis	
Behrman, John F.	Md.	Belvin, Elizabeth	
B.S. 1947, Wilton Teachers College		A.B. 1929, Greensboro College	Germany
Behrens, Nicholas Theodore	D.C.	Belz, Eric Stuart	Oreg.
Behun, Joseph Andrew	Ohio	Bemis, Cynthia Marshall	
		A.B. 1944, Colorado College	

Bencich, Nina Liberta	D.C.	Benton, Jean Elizabeth	Md.
Bender, Janet Reba	Va.	A.B. 1940, Mount Holyoke College	
Bender, John Joseph	D.C.	A.M. 1942, The George Washington	
Bender, Marian Kay	Md.	University	
Benedict, James Thomas	Ind.	Benziger, Peter Hamilton	D.C.
Benedict, Thomas Reilly	N.Y.	B.S.E. 1949, Princeton University	
Benedict, Virginia Smith	Mont.	Beran, Irene Frances	Wis.
A.B. 1943, University of California		Berdous, Richard John	D.C.
Beneman, Charles Henry	D.C.	Berenson, Mendelle Tourover	D.C.
A.B. 1944, A.M. 1947, The George		Berg, Esther Libby	D.C.
Washington University		Berg, Karl Joseph	D.C.
Bengtson, Ernest Raymond	R.I.	Berg, Louella Miller	D.C.
Bengtson, Karl Henry	N.Y.	Berg, Martin Donald	D.C.
Benit, Henry Junior	La.	Bergbom, Frank Vincent	Va.
Benjamin, James Stanley	S.C.	Bergen, Willis	D.C.
Benjamin, Robert Serell	Mich.	B.D. 1922, San Francisco Theological	
A.B. 1942, Albion College		Seminary	
Benjamin, Vernon Edgar	N.Y.	Berger, Alfred Edward	Va.
Benkert, Eva Elli	Md.	B.B.A. 1940, College of the City of	
Benn, Edna Merle	Va.	New York	
Benn, John Davis, Jr.	Va.	Berger, Arnold Irving	D.C.
Benner, Barbara Louise	Va.	Berger, Arthur Joseph	Pa.
Bennet, Geoffrey Carr	Colo.	A.B. 1948, Bucknell University	
B.A.S. 1946, University of California		Berger, Bernard Nelson	D.C.
at Los Angeles		Berger, Florence Bernice	D.C.
Bennet, Joseph Campbell, Jr.	Va.	Berger, Larry Jerold	D.C.
Bennett, Aileen Farmer	D.C.	Berger, Robert	Va.
B.S. 1941, Mary Washington College		Berger, Samuel Morris	Pa.
Bennett, Anne Rutherford	Va.	Berger, Stanley Elliott	D.C.
A.B. 1939, Goucher College		Beiglund, Ralph Vincent	Minn.
Bennett, Barbara Dorcas	N.C.	A.B. 1942, Concordia College	
Bennett, Barbara Jeanne	Md.	Bergman, Melvin John	Va.
Bennett, Betty Ann	D.C.	Bergman, William Hunter	D.C.
Bennett, Harry Bates	D.C.	Bergmann, Frederick Louis	D.C.
Bennett, Joan Kathleen	Pa.	A.B. 1937, Washburn College	
Bennett, Joseph Dickinson	Ark.	A.M. 1940, State College of	
B.S. 1949, University of Arkansas		Washington	
Bennett, Kenneth Chester	Va.	Bergmann, Robert T.	Md.
Bennett, Kenneth Malvin	Va.	B.S. in Ed.E. 1943, University of	
Bennett, M. Jeanne	Md.	Missouri	
B.S. 1946, University of Maryland		Bergstrom, Roger Heaner	Md.
Bennett, Milton Orens	Va.	Berish, Robert Martin	Pa.
Bennett, Nelson	D.C.	Berkan, Elvera Pfister	Va.
Bennett, Ralph Berry	D.C.	Berkan, Leonard L.	N.Y.
Bennett, Richard L.	Md.	B.S. 1949, The George Washington	
Bennett, Robert Laster	Miss.	University	
Bennett, William Batchelder	Va.	Berkey, Josephine Ann	D.C.
B.S. 1935, University of New		A.B. 1931, Indiana University	
Hampshire		Berkman, Irene Lee	Fla.
A.M. 1946, Ph.D. 1941, Louisiana		Berkner, Patricia Ann	Md.
Southern University		Berl, Mildred Elliott	D.C.
Bennsky, George Michael, Jr.	D.C.	Berlin, Jerome Irwin	Va.
Benoist, Marie L.	D.C.	Berliner, Hans Jack	D.C.
Benson, Arthur Leonard	N.J.	Berlinsky, Louis	D.C.
A.B. 1943, Lehigh University		Berman, Gloria Victoria	D.C.
Benson, Carol Elison	Va.	Berman, Harold John	D.C.
Benson, David Russ	Ala.	B.S. 1948, Georgetown University	
Benson, Donald Darrell	Nebr.	Berman, Hyman	N.Y.
Benson, Floyd W.	Calif.	A.B. 1940, The George Washington	
A.B. 1933, Stanford University		University	
Benson, Harriette Miller	Va.	Berman, Jack Donald	Ill.
Benson, Jacques M.	Utah	Berman, Milton	D.C.
B.S. 1947, Utah State Agricultural		Berman, Ruth Florence	D.C.
College		Berman, Stanford Warner	D.C.
Benson, Lelamae	N.D.	Bernard, Eugene Louis	D.C.
Benson, Margaret Brown	Md.	A.B. 1942, Ohio State University	
A.B. 1940, East Carolina Teachers		Bernard, Kenneth	Fla.
College, N. C.		B.S. 1922, Massachusetts Institute of	
Benson, Virginia B.	Va.	Technology	
A.B. 1936, College of William and		Berne, William	D.C.
Mary		Berner, John Thomas	Pa.
Benson, Wilbur Earle	D.C.		
Benson, William Ewell	D.C.		

Bernet, Howard Cavender B.S. 1929, United States Naval Academy	D.C.	Bevelacqua, Charles Angelo B.S. in M.E. 1946, University of Pittsburgh	Pa.
Bernot, Joseph John	Pa.	Bevins, Rowell Morton	Vt.
Bernstein, Charles Nathaniel B.S. 1940, College of the City of New York	D.C.	Bevitt, William Dealtry	Md.
Bernstein, Michael Joseph Jesse LL.B. 1940, LL.M. 1946, New York University	N.Y.	Beven, Karel Herman LL.B. 1943, University of Utrecht, Netherlands	Md.
Bernstein, Miriam Hannah A.B. 1949, Mount Holyoke College	N.Y.	Bevins, Karel Herman LL.M. 1948, University of Amsterdam, Netherlands	Mich.
Bernstein, Norman	D.C.	Beyer, Elnora M.	N.J.
Bernstein, Paul	D.C.	Beyer, Joan Florence	D.C.
Bernstein, Philip Harris	D.C.	Bezdecki, Rita M.	D.C.
Bernstein, Stanley Bertram	N.Y.	Bialek, Stanley Morris	D.C.
Berrett, Malcolm Ernest	Md.	Bialek, Teddy	Va.
Bernio, Esther Maria	D.C.	Bibb, Lawrence Clayton	
Berry, Arland Norwood	Md.	A.B. 1948, The George Washington University	
Berry, Barbara A.B. 1944, Oberlin College	Mich.	Bibolet, Roland Henry A.B. 1942, University of Arizona	Ariz.
Berry, Charles Wintzel	D.C.	Bice, Earl Russell, Jr.	D.C.
Berry, Frederick Hamer B.S. 1943, M.F. 1944, Duke University	Md.	Bie, Rita Marie	Pa.
Berry, Hugh Gordon	D.C.	Biedebach, Herbert Edward	Calif.
Berry, Jack Aloysius	Ill.	Biegel, Mark M.	D.C.
Berry, Margaret Virginia	Del.	A.B. 1944, The George Washington University	
Berry, Ovie Lee	D.C.	Bierly, Jack Stealton	D.C.
Berry, Robert Hahn	Ohio	A.B. 1941, M.Ed. 1942, University of Maryland	Md.
Berry, Sally Louise	W.Va.	Bierly, Robert Foust	
Berry, Seymour	N.Y.	A.B. 1943, University of Maryland	D.C.
Berryman, Richard Blaxton, Jr.	Va.	Bierman, Daniel Jacob B.	Va.
Bessey, Joseph Bernard	N.J.	Bierman, George Raymond	Md.
Berson, Harold Ralph A.B. 1949, The George Washington University	Nev.	Bierman, Virgil Robert	Va.
Berthold, Heinz Alfred	Ind.	Biersack, Gerta Emily M.D. 1944, University of Frankfurt, Germany	
Berthrong, Raymond B.S. 1938, United States Naval Academy	D.C.	Bigelow, Robert Orville B.S. 1949, University of Maryland	Md.
Bertine, Harry Marion, Jr.	Pa.	Biggs, William Russell	D.C.
Bertola, Hugo John A.B. 1943, University of Michigan	Mich.	Biggs, Joseph Daniel A.B. 1940, East Carolina Teachers College	D.C.
Bertolini, Ernest Paul	D.C.	Bigler, James Campbell B.S. 1942, United States Naval Academy	Md.
Bessam, Clarence Russell	D.C.	J.D. 1942, The George Washington University	
Bemis, Martha M.	D.C.	Bikowski, John Adam	Pa.
Bendine, Lillian A.B. 1929, Hunter College A.M. 1948, The George Washington University	D.C.	Bilal, Wayne Lawrence	D.C.
Besier, Rudolph	N.Y.	Bildman, Allene	D.C.
Besner, Jacob	D.C.	Biles, Patricia Norma	D.C.
Besosa, Sheridan Esteban	D.C.	Bihnski, Chester Frank	Vt.
Bess, Robert William	W.Va.	Bitler, Charles Mayo	N.Y.
Best, Harold Lloyd A.B. 1940, The George Washington University	N.Y.	Bitler, Paul Stanley	Pa.
Best, Lee James A.B. 1949, Duke University	N.C.	Bitlerbeck, Wilfred Jerome	D.C.
Best, Walter Charles	Va.	Bitlock, Eugene Wyckoff, Jr.	Md.
Bethel, Marion Ann	D.C.	Billings, Nancy Deuel	D.C.
Betiendorf, Valerie C.	Md.	Billmesley, Betty Ann	Ill.
Bettens, Warren Joseph B.S. 1935, United States Naval Academy	D.C.	Billmesley, Charles Marion	S.D.
Betzler, John Richard	Va.	Billingsley, Patrick Paul B.S. 1948, United States Naval Academy	Pa.
Beuchert, George Henry, Jr. B.S. in B.A. 1946, LL.B. 1949, Georgetown University	Va.	Billingsley, Ruth Louise	D.C.
Beum, Corlin O., Jr. B.I.E. 1938, Ohio State University	Ohio	Bilmanis, Ceronis	Pa.
		Bilohlavak, Andrew John, Jr. A.B. 1949, The George Washington University	Pa.
		Bilski, Albert Stanley	Pa.
		Binn, Clement Floyd	Md.
		Binckley, James William	

Binder, Albert	D.C.	Black, Garland Cuzorte, Jr.	N.Y.
Binder, Jack William	D.C.	B.S. 1945, United States Merchant	
Binder, Samuel Henry	Iowa	Marine Academy	
Bins, Rachel Jean	Va.	Black, George LaDow	Md.
A.B. 1945, Wellesley College		B.S. in E.E. 1946, University of	
Binger, Margaret K.	Tex.	South Carolina	
B.S. 1947, Hardin College		Black, Lora Street	Va.
Bingert, Georsina J.	N.Y.	B.S. in Ed. 1924, South Illinois	
LL.B. 1938, Washington College of		University	
Law		Black, Richard McKoon	D.C.
Binney, George Thomas	Mass.	Black, Robert John	Ill.
Bitzel, Gloria Miller	Ky.	B.S. 1949, Colorado School of Mines	
Biram, James Raymond	Conn.	Black, William Lewis	Va.
B.E.E. 1948, Yale University		Blackburn, Donald D.	D.C.
Bird, James Frederick	D.C.	B.S.Ad. 1958, University of Florida	
A.B. 1949, The George Washington		Blackburn, Gregory James	Md.
University		Blackett, Gustav	Md.
Bird, James Roland	D.C.	Blackford, Virginia Lee	D.C.
Bird, Richard Walter	D.C.	B.S. 1949, American University	
Bird, William Lawrence	D.C.	Blackmore, Helen Maude	D.C.
Bird, William Potter	Va.	A.B. 1949, The George Washington	
A.B. 1944, Yale University		University	
Birdsell, John Edmund	Md.	Blackstone, Harry Gregory	D.C.
A.B. 1945, LL.B. 1947, The George		Blackwell, Albert Turner	Md.
Washington University		A.B. 1948, University of Maryland	
Birmingh., Alfred Nelson	Md.	Blackwell, Robert Lee	D.C.
Birmingham, Henry Patrick	R.I.	Blackwood, Arnold	D.C.
B.S. in Ed. 1942, Rhode Island		B.S. 1938, Wilson Teachers College	
College of Education		Blackwood, Fredo C.	Iowa
Birmingham, Thomas Harlan	D.C.	Bladen, Marvin Monroe	Va.
Birnbaum, Eugene Albert	Ohio	Bladegroen, Robert John	N.Y.
Birnbaum, George	N.Y.	A.B. 1942, LL.B. 1947, Cornell	
A.B. 1941, Brooklyn College		University	
M.S. 1949, The George Washington		Blaesser, Willard William	D.C.
University		B.S. 1934, A.M. 1940, University of	
Birnbaum, Henry	D.C.	Wisconsin	
A.B. 1945, A.M. 1946, New York		Blauer, Channing Davis	Mo.
University		Blair, Donald DeWitt, Jr.	Ind.
Birnbaum, Irving	N.Y.	A.B. 1949, Wabash College	
A.B. 1948, Brooklyn College		Blair, James Colbert	D.C.
Birner, Ernestine B.	D.C.	Blair, Kay Reilly	D.C.
Biro, Mary Theresa	D.C.	Blair, Thomas Calvin	D.C.
Birtheight, Adnah Judge	Md.	B.S. 1947, University of Michigan	
B.S. 1935, The George Washington		Blake, George Francis	Md.
University		Blake, Geraldine A.	Colo.
Bisbee, Donald Mayo	Va.	Blake, Harry Thomas	D.C.
Bisen, Ruth	N.Y.	Blake, Martin	D.C.
B.S. 1948, Brooklyn College		B.S. 1947, Northeastern University	
Bisgyer, Edgar Maynard	Md.	Blake, O. William	N.Y.
Bishop, Alan Grayson	Va.	A.B. 1949, M.S. 1949, Syracuse	
A.B. 1948, The George Washington		University	
University		Blake, William Joseph, Jr.	Va.
Bishop, Christine Elizabeth	Miss.	Blake, William Lucius	D.C.
Bishop, George Edward	D.C.	A.B. 1949, The George Washington	
A.B. 1943, The George Washington		University	
University		Blakemore, George Jefferson, Jr.	Pa.
Bishop, Iris Mildred	Mo.	A.B. 1949, The George Washington	
Bishop, Ruth Cox	W.Va.	University	
A.B. 1947, Davis and Elkins College		Blakemore, James Russell	Mich.
Biskar, Aaron	D.C.	B.S. 1944, University of Illinois	
Biskar, Marvin	D.C.	Blakemore, Lemuel Anthony	Minn.
Biskin, Allen Raymond	Md.	B.S. 1940, University of Minnesota	
B.S. 1950, University of Maryland		Blanchard, Charles Fuller	N.C.
Bitter, John William	D.C.	A.B. 1947, LL.B. 1949, Duke	
Bittermann, Kathleen Studdart	Minn.	University	
Bizot, Hyland	Ky.	Blanchard, Earl Harrison	Vt.
B.S. 1934, University of Kentucky		Blanchard, Millard Lewis	N.H.
Bjorklund, Otto Edward	Minn.	Blanchett, Carl	N.J.
Bjorlo, Einar	N.Y.	B.S. 1944, United States Coast	
Blachly, Charles Howard	Fla.	Guard Academy	
B.S. 1949, American University		Blanchette, Mary Anne	D.C.
Black, Cameron Arthur	Pa.	Blanch, Eleanor Rebecca	D.C.
Black, Elizabeth Rosalie	D.C.		

Blank, Eugene	Md.	Bloom, Jerome Philip	Md.
A.B. 1948, Johns Hopkins University		B.S. 1947, Wayne University	N.M.
Blankenheimer, Bernard	N.Y.	Bloom, John Porter	Pa.
A.B. 1941, Brooklyn College		Bloom, Roger Paul	Va.
Blankenship, James Delbert	Mo.	Bloomington, Gene Guy	Va.
Blankenship, Leroy Clifton	D.C.	Bloomquist, Jean Hall	Pa.
Blankenship, Mildred Louise	D.C.	Bloss, Glennor Ethel	D.C.
Blanton, Virginia Booth	Va.	Blubstein, Seymour	D.C.
Blanz, James McCawley	D.C.	Blue, John Frederick	D.C.
A.B. 1949, Bowdoin College		B.S. 1942, North Carolina State	
Blaser, John Frank	N.Y.	College	D.C.
Blattchford, Walter Larned	Ill.	Bluestone, Herman	D.C.
B.S. 1913, United States Naval		Blum, Bernard Marvin	D.C.
Academy		Blum, Daniel	D.C.
Blatt, Ethel D.	Va.	B.M.E. 1944, College of the City	
Blatt, Joseph Duv	Va.	of New York	D.C.
B.S. in C.E. 1935, College of the		Blum, Joseph	
City of New York	D.C.	B.S. 1940, College of the City of	
Blau, Gerda Johana		New York	
Dr. Jur. 1934, Vienna University,		A.M. 1948, The George Washington	
Austria		University	D.C.
Ph.D. 1943, London School of		Blum, Royal Isaac	N.J.
Economics	D.C.	Blumberg, Beverly Gayle	
Blau, Paul Raoul	Pa.	A.B. 1944, University of Southern	
Blazek, Dorothy M.	D.C.	California	N.J.
Blechman, Ann Beatrice	N.J.	Blumberg, Marvin	D.C.
Blechman, Martin George		Blume, Adelaide	Ohio
B.S. 1949, The George Washington		Blumenfeld, Isadore David	
University		B.S. in E.E. 1949, Case Institute	
Bleckley, Viola Prudence	Ga.	of Technology	N.Y.
A.B. 1940, Piedmont College		Blumenkopf, Norman	
Bledsoe, Samuel Carter	Md.	A.B. 1941, Brooklyn College	Ohio
Bleecker, David	N.Y.	Blumer, Emily Selma	D.C.
Blessing, Edwin Hoffer	Va.	Blute, William Augustine	Va.
B.S. 1936, Dickinson College		Boak, David Gordon	
Blessing, Melvin J.	N.Y.	A.B. 1947, University of North	
B.C.E. 1940, Cornell University		Carolina	D.C.
L.L.B. 1949, Georgetown University		Boak, Mary Frances	Va.
Blevins, Eugene Winford	Tenn.	Boarman, William Eugene	Ohio
A.B. 1942, King College		Bobo, Carl E., Jr.	D.C.
Blevins, Hansel Herbert	Tenn.	Boche, Donald John	Md.
Blitch, Michael Gordon	Fla.	Bochenek, Benjamin Harman	
Blitman, Samuel	D.C.	B.S. 1947, University of Maryland	D.C.
A.B. 1931, College of the City of		Bochenki, Feliks Gustaw	N.Y.
New York		Bock, Eugene William	Kans.
A.M. 1917, Columbia University		B.S. 1949, Texas Christian University	
Blitzstein, Ethel	N.Y.	Bock, Robert Leroy	
Bloch, Joyce Edna	D.C.	A.B. 1948, University of Kansas	D.C.
Bloch, Natalie Ebin	D.C.	Bockoven, Thomas Sanford	Fla.
A.B. 1943, Smith College		Bodden, Robert Clark	Ala.
Bloch, Robert Oakleigh	Nebr.	Boddie, Charles Edwin	Ill.
A.B. 1949, The George Washington		Bodecker, George William	
University		B.Ed. 1911, Western State Teachers	
Block, Faith Florence Jones	D.C.	College	
Block, Frederick Laurence	N.Y.	B.S. 1938, M.S. 1939, University of	Pa.
Block, Hansel Stanley	Mo.	Illinois	
B.S. in E.E. 1944, University of		Boden, Clyde Daniel, Jr.	
Missouri	D.C.	A.B. 1947, Franklin and Marshall	
Block, Huntington Turner		College	Pa.
A.B. 1918, Princeton University		Bodinsky, Helen	Va.
Blodgett, John Quigg	R.I.	Bodmer, Catherine Phillips	
B.S. 1943, Georgetown University		B.S. 1935, Mary Washington College	Tex.
Blodgett, Norman Stack	D.C.	Boehl, Maurice Gohlts	
B.S. 1944, Worcester Polytechnic		A.B. 1940, Agricultural and Mechanical	
Institute		College of Texas	N.Y.
Bloedorn, Helen	D.C.	Boehlert, Jessie Clara	D.C.
Blondell, Jeanne Elizabeth	Md.	Boehm, Charles Heilmuller	D.C.
Blondes, Leonard Saul	D.C.	Boesch, Daniel Swaine	Va.
Bloom, Ann Miller	Calif.	Boesch, Pauline Frappier	
Bloom, Carrington Murray	D.C.	B.E. 1927, Illinois State Normal	D.C.
Bloom, Charles Clifton	Pa.	University	D.C.
Bloom, Eli Henry	Md.	Boesch, Ruth Elinor	
		Boettcher, Henry Joachim	

Bogan, Joseph Borrows, Jr.	Md.	Bonnema, Jean Marie	D.C.
Bogan, Patricia Alice	D.C.	Bonner, Josephine Elizabeth	Va.
Bogdanoff, Isidore	N.Y.	Bonnet, Walter	Va.
A.B. 1943, The George Washington University		B.S. 1942, University of Maryland	
Borema, Stuart Chapman	D.C.	Bonnett, Leo Victor	Ill.
Boren, William	D.C.	A.M. 1942, The George Washington University	
A.B. 1949, The George Washington University		Bonney, Charles Lee	Va.
Bosley, William Tuckerman	D.C.	Bono, Evert Lee, Jr.	D.C.
Bosner, Robert William	Va.	Bonus, Lorena Eleanor	D.C.
Bovorad, Abraham	N.Y.	Bonsathan, William Daughtry	Tenn.
B.S. 1941, College of the City of New York		A.B. 1942, United States Naval Academy	
Bolan, John Patrick	Pa.	Bonwat, Kenneth Stanley	D.C.
Bolan, Joseph James	Pa.	Bonwer, Patti Yvonne	D.C.
Bolan, Robert Marion	D.C.	Booker, Lewis Albert	Va.
Bolovits, John	Md.	A.B. 1949, The George Washington University	
Boloflash, Anthony George	D.C.	Bookman, Irving	N.J.
Bolter, Doris Sherrar	Va.	A.B. 1940, New York University	
Bose, James William	D.C.	Boone, Betty Jane	Ind.
Bossonneault, Lorette Lucy	D.C.	A.B. 1948, Ball State Teachers College, Ind.	
Boisvert, René Peter	Conn.	Boone, Marjorie Anne	D.C.
Boisvert, William Edward, Jr.	D.C.	A.B. 1945, Northwestern University	
A.B. 1947, University of Utah		Boop, Mabel Ellwood	Pa.
Boklund, Gustaf Leonard	D.C.	Boorman, Mara Noves	D.C.
Boland, Timothy Eugene	Pa.	A.B. 1947, Wells College	
Boldt, John Henry	Pa.	Boothman, Robert Henry	D.C.
Bolin, Edgar Lee	Ga.	Bonitas, James Louis	D.C.
Bollenbacher, Katharina	D.C.	Boston, Robert Edward	Iowa
A.B. 1944, A.M. 1936, University of Arkansas		Bor, Robert M.	D.C.
Bollie, Ernest John	Iowa	A.B. 1942, New York University	
Bollinger, Howard Moore	Md.	L.L.B. 1947, Columbia University	
B.S. 1943, M.S. 1947, Massachusetts Institute of Technology		Borchardt, Owen Franklin	D.C.
M.B.A. 1948, Harvard University		Borcharding, Earl William	Wis.
Bolt, Robert	N.Y.	A.B. 1949, The George Washington University	
Bolton, Melissa Dement	Md.	Borivinski, Henry Ferdinand	Conn.
Bolton, Phyllis Lilian	Mass.	Borders, Glenn Houghton	D.C.
A.B. 1949, Bryn Mawr College		Botel, Paul Arnold	Va.
Bolton, Thomas Meredith	N.C.	B.S. 1944, University of Kansas	
B.S. 1948, Wake Forest College		M.B.A. 1948, Harvard University	
Bolton, Vivian Reynolds	Pa.	A.M. 1944, Columbia University	
Boltz, Donald Arthur	S.D.	Borelli, Francis Arnold	D.C.
Bon, David McCulloch	D.C.	Bosengasser, Rosalie Elizabeth	Ark.
Bon, Franklin Albert	D.C.	Borges, Louis Joseph, Jr.	Pa.
A.B. 1948, College of William and Mary		B.S. 1941, Pennsylvania State College	
Bonamino, Alberto Domenico	Ohio	Borioti, Joseph	N.Y.
Bonanni, Louis John, Jr.	Pa.	Borkowski, Walter Aloysius	N.J.
Bonanno, Antonio Charles	D.C.	Borland, Eugene Victor	D.C.
Bonavitch, George Michael	Pa.	Borlmann, Carl Louis	D.C.
A.B. 1949, The George Washington University		Bornstein, Irwin Seymour	N.Y.
Bond, Gorman Morton	Md.	Boroughs, Lewis Edward	N.C.
Bondareff, Erwin Allen	D.C.	L.L.B. 1948, The George Washington University	
Bondareff, William	Md.	Borrekard, Roger	Md.
Bondy, Malcolm Edward	D.C.	Bortner, Jeffrey Clair	Pa.
A.M. 1945, Brooklyn College		Bortz, Clara Victoria	Pa.
Boney, Richard Francis	D.C.	Borysko, Emil	D.C.
Bonham, Jane Eldon	Va.	A.B. 1948, Brooklyn College	
Bonhotel, Maudie Ball	Conn.	Borzilleri, John Philip	N.Y.
Bonilla, Lempira Eusebio	D.C.	Borzilleri, Paul Thomas	N.Y.
Bonis, Austin Jerome	N.Y.	Boss, Leonard Albert	Va.
B.S. 1941, College of the City of New York		Bosin, Sylvia Estelle	Va.
Bonkowski, Adam Stanley	Md.	Bosman, Joan Frances	N.Y.
Bonnell, Elwyn Thomas	Mich.	Bosmans, Thomas Constantinos	D.C.
A.B. 1942, Michigan State College		Bostick, James Lynn	D.C.
Bonnell, Mabel Angela	Mont.	Bostick, Jewel Meeks	Miss.
Bonnell, Virginia Yvonne Crosswhite	Mich.	Bostwick, Don Phillip	Iowa
A.B. 1943, University of Wichita		Boaswell, John Gordon	Md.
		Bodorf, Robert Jean	D.C.

Boteler, Charles Masdefrau, Jr. A.B. 1948, Haverford College	D.C.	Bowman, Leslie Eugene Bowman, Robert Tschannen A.B. 1948, Miami University	S.D. Md.
Botsford, Hannah Leah A.B. 1940, Rockford College	D.C.	Bowman, Thomas Edward Bowron, Francis Lloyd	Md. Wyo.
Bott, Alan	Pa.	Bowyer, Wesley Orton	Va.
Bottenfield, Richard Joe	Pa.	Boyers, Carl B.S. 1940, College of the City of New York	Md.
Bottonley, Helen Mae	Miss.	Boyce, David Barry	Md.
Bottoms, John Watson B.S. 1945, United States Naval Academy	Fla.	Boyd, Alfred Rowe	Md.
Bottone, Patrick Francis B.S. 1947, Seton Hall College	D.C.	Boyd, Frank John	Va.
Bottorf, Sara Frances	D.C.	Boyd, Harold Loomis	Va.
Botts, Max Eugene	Ill.	Boyd, Helen	D.C.
Boutz, Eugene George	Ind.	Boyd, Tobias J.	Va.
Bowdren, Mary Josephine	D.C.	Boyd, William Walker, Jr.	Pa.
Bowdard, Nelson L., Jr.	D.C.	Boyer, Delos White	D.C.
Bowaty, Rene Andre	Miss.	Boyer, James Orval	Pa.
Bowdoin, Isabel Spotswood	Va.	Boyer, Joan Zelda	Mass.
Bowdoin, Jenny Alice A.B. 1945, The George Washington University	D.C.	Boyer, John Alison	Md.
Bowdoin, August James	Md.	Bowser, Patricia Anne	Md.
Bourdon, Edouard Docteur en Droit, 1938, Liege University, Belgium	Belgium	Bowyer, Robert Thomas B.S. 1937, University of Pennsylvania	Va.
Bourcet, Marie Paule Irene	Canada	Boylan, Vincent DePaul B.B.A. 1949, Manhattan College	Md. N.Y.
Bourd, Ruth Clara B.S. 1949, Illinois Institute of Technology	Ill.	Boothard, Paul Maurice	N.Y.
Bourgeois, Monte F., Jr. A.B. 1941, St. John's College, Md.	D.C.	Boyle, Barbara Alice	Wyo.
Bourke, Anne Rosaleen B.S. 1937, University of Maryland	Md.	Boyle, Betty Jean	Pa.
A.M. 1949, The George Washington University		Boyle, Charles Aloisious	D.C.
Bowstaren, Nancy Margaret	D.C.	Boyle, John H.	N.Y.
Boston, Kathleen Jefferson	Va.	Boyle, John Alexander	D.C.
Bovee, Howard Ralph	Vt.	Boyle, Neal Joseph	D.C.
Boward, Camilla Angie B.S. in Ed. 1944, University of Maryland	Md.	Boyle, Peter William	D.C.
Boward, Lawrence Mark	Md.	Boyles, John Harrison A.B. 1944, St. Roseaventure College L.L.B. 1948, Georgetown University	Md. Md.
Bowen, Donald Eugene	Mont.	Bozarth, Elmer Neal, Jr.	N.Y.
Bowen, Lois Green A.B. 1945, American University	D.C.	Bozek, John Richard	Md.
Bowen, Thales, Jr. A.B. 1949, The George Washington University	D.C.	Bozzovich, Antonette	N.Y.
Bowen, Verna Sarah	Utah	Bozzuti, Michael Adnan	N.D.
Bower, James VanBuskirk	Pa.	Braaten, Norris Oberlin	D.C.
Bower, Robert Sharon A.B. 1929, Stanford University	Wash.	Bracken, Anna Paula B.S. 1948, University of Maryland	Tex.
Bowers, Arthur Lewis B.F.E. 1948, College of the City of New York	N.Y.	Bracken, Lin Tom A.B. 1948, Hardin Simmons University	Va. Va.
Bowers, Edwin Ralph B.S. 1948, Virginia Military Institute	Va.	Bracken, Leath Mason	N.J.
Bowers, Richard Simpson	D.C.	Brackett, Louis Anne	
Bowers, Robert Mahoney	Va.	Bradlock, Harry Elton B.S. 1945, United States Naval Academy	N.J. N.J.
Bowler, John Andrew, Jr. A.B. 1940, The George Washington University	D.C.	Bradlock, John Thomas	N.J.
Bowles, Jean Frances	Md.	Bradley, Robert Edgar, Jr. B.S. 1927, United States Naval Academy	P.C.
Bowles, Joseph Luckett	D.C.	Bradfield, Ursell M.	Va.
Bowlin, Ina Jane	Ohio	Bradford, Gary Morgan	Va.
Bowling, Frances Hazel	Va.	Bradford, Ralph Gordon	Va.
Bowling, Lloyd Spencer	Md.	Bradley, Anna Lou	Tex.
Bowman, Donald Hart	Tex.	Bradley, Bettine	D.C.
Bowman, Emerson Ernest B.S. 1948, Colorado Agricultural and Mechanical College	Ariz.	Bradley, Carolyn Fontaine	Md.
		Bradley, John Graham	Nev.
		Bradley, John Grover	Pa.
		Bradley, Richard Homer	D.C.
		Bradley, Robert Bell B.S. 1948, University of Maryland	Va.
		Bradley, William M. Rae	Nev.
		Bradley, William Orlando	Va.
		Brake, Joseph V.	Ind.
		Bradway, Mildred Stuede B.S. in M.E. 1948, Purdue University	

Brady, George Moore, Jr. A.B. 1947, Johns Hopkins University	Md.	Breeding, Robert Burton A.B. 1944, Transylvania College	Ky.
Brady, Neal Caldwell B.S. 1947, Western Reserve University	Calif.	B.S. 1944, University of Kentucky	D.C.
Brady, Thomas Anthony	Mo.	Breen, James F.	Ohio
Bragon, Richard Larry	Md.	Breen, James Michael	D.C.
Brumby, Frederick Arnold	D.C.	Breen, Mary Margaret A.B. 1940, Catholic University of America	N.Y.
Bruck, Eugene	W Va.	Brees, Beatrice Ruth	D.C.
Bruley, Gerald Neal	Md.	Breeskin, Sol Daniel	Md.
Bruce, Oleta	Fla.	Brehme, Robert Woodruff	D.C.
Broomlette, Lee Clinton, Jr.	Tex.	Brewer, Aaron I. B.S. 1911, M.S. 1914, College of the City of New York	N.Y.
Brown, A. Stanley B.S. 1946, Virginia Polytechnic Institute	D.C.	Breitsacher, Peter	Norway
Brown, Alvin	D.C.	Breitung, Amelia	D.C.
Brown, Edward Francis	Md.	Brendler, Dossie Hannah	N.J.
Branch, Elizabeth Helen	Conn.	Brennan, Henry Stephen	Pa.
Brand, Albert William, Jr.	D.C.	Brennan, Edward William A.B. 1941, St. Francis College	D.C.
Brand, John Sibley	D.C.	M.B.A. 1948, University of Pennsylvania	N.Y.
Brandenburg, Virginia Allen	Ky.	Brennan, Francis Xavier	D.C.
Brandenburg, Elise Ann B.S. 1949, The George Washington University	Va.	Brennan, Frederick William	Pa.
Brandenburg, Eugenia	Va.	Brennan, George Francis	Pa.
Brandon, Ronald Dean	D.C.	Brennan, James Joseph	Va.
Brandt, Jean	D.C.	Brennan, John Francis	Va.
Brandt, John Nicholas B.S. in C.E. 1941, University of Kansas	Mo.	Brennan, Robert James A.B. 1949, The George Washington University	Pa.
Brandt, Robert Fred B.S. 1941, M.B.A. 1949 New York University	Va.	Brennan, William Francis B.S. 1940, University of Scranton	Md.
Brann, Robert Joseph	Pa.	Brennen, Melvin Luther	Fla.
Brant, Mary E.	Pa.	Brenner, Daniel Campbell	Md.
Brantley, Joe Vernon A.B. 1943, Howard College	Ala.	Brenner, Sonja B.S. 1946, Kansas City Teachers College, Mo.	Va.
Brantley, James Crawford B.B.A. 1947, University of Georgia	D.C.	Brentlinger, John Weeks A.B. 1948, The George Washington University	D.C.
Brantley, Walter Frederick	Md.	Breslau, Ruth Cooper	D.C.
Brasel, Palmyra Lavina	S.D.	B.S. 1945, The George Washington University	Colo.
Brashear, Victoria Michael	D.C.	Breslow, Joseph B.S. 1946, University of Notre Dame	D.C.
Brashears, Helen Hoffa A.B. 1935, Western Maryland College	Md.	Bresler, Clarke Sheldon	Ind.
A.M. 1939, New York University		Bressler, Wilson Kress	N.Y.
Braxington, Clayton Furman, Jr.	Va.	Breuer, Alexander	D.C.
Braskamp, Anne Bernice A.B. 1949, Wilson College	D.C.	Breux, Philip Westover	N.Y.
Brastow, Jerome Duryea A.B. 1949, The George Washington University	D.C.	Brew, Eugene Lawrence	Md.
Braswell, Hiram Eugene A.B. 1948, University of North Carolina	N.C.	Brewer, George Weldon B.S. 1931, Atlantic Union College	Va.
Brauer, Walter John	N.J.	M.Ed. 1947, Boston University	N.Y.
Brauner, Dorothy Caroline	Md.	Brewer, Glenn Faye	Md.
Brauning, Carl Leonard, Jr.	Va.	Brewer, Joseph Daniel	Md.
Brauning, Helen Jane	D.C.	Brewer, Muriel Arwood	Md.
Brawner, Edgar Newton, Jr.	D.C.	Brewer, Robert George A.B. 1948, Hamilton College	Va.
Brawner, Selma Moody	Colo.	Brewster, Mary Sanford	N.J.
Bray, Louise Keeton	Mss.	Breza, Edward John	Va.
Bray, Ruth Marie	Ohio	Brice, John Elfred	D.C.
Brayton, Barbara Jean	Md.	Brice, Lawrence Etheridge, Jr. A.B. 1949, The George Washington University	Md.
Brazill, Kathryn Mary A.M. 1942, Pennsylvania State College		Bride, Crescent Joseph	Iowa
Brecht, John Olaf A.B. 1949, Columbia University	Va.	Bridges, William Emerson	Va.
Brengle, Grace Lady	D.C.	Bridge, Edward William	Va.
Brengle, James A.	D.C.	Bridge, Vivian Joan	Va.
Brecht, Harold Marvin	Md.	Bridges, Harry Taylor	Va.
Breck, John Robert	D.C.	Bridges, Lillian Tavis	Va.
Breckenridge, John Preston B.S. 1949, University of Arkansas	Va.	Bridges, Martha Beam B.S. 1946, Asheville Teachers College, N.C.	N.C.

Briggs, Francis Gifford	Ky.	Brody, Alfred Lawrence	Mass.
Briggs, James Philip, Jr.	Va.	B.S. in E.E. 1940, Northeastern University	
B.S., F.S. 1947, Georgetown University		Brody, Alvin	D.C.
Briggs, Josephine Marie	Md.	Brody, Arthur Lionel	N.Y.
Briggs, Lee	N.C.	Brody, Leonard Harry	N.Y.
A.B. 1949, Carleton College		Brody, Norman	D.C.
Briggs, Margaret Ann	D.C.	Bronaugh, Alfred Taylor	D.C.
Briggs, Raymond Westcott	Fla.	B.S. in E.E. 1930, J.D. 1940, The George Washington University	
Brightman, Edwin Risley	Va.	Bronaugh, John Reeder	D.C.
Brill, Anne Marie	Pa.	B.S. in M.E. 1947, Virginia Polytechnic Institute	
Brill, Edward Pope, Jr.	Md.	Bronstein, Max Wilfred	D.C.
Briller, Shirley Estelle	N.Y.	Brook, Robert Arnold	N.Y.
Brimer, Alan Anthony	N.Y.	Brookbank, LaMont Atwood	D.C.
Brimfield, Enid Joyce	N.I.	Brooke, Joseph Algernon, Jr.	Md.
Brimley, Ralph F. W.	N.C.	Brookley, Eunice Josephine	Md.
B.S. 1928, North Carolina State Teachers College		A.B. 1948, University of Maryland	
A.M. 1940, University of North Carolina		Brooks, Charles Granden III	Md.
Brindle, Clayton Carl	D.C.	A.B. 1947, Western Maryland College	D.C.
Brintizer, Peter Helmuth	N.Y.	Brooks, David	N.Y.
A.B. 1940, Syracuse University		Brooks, Harrison Morton, Jr.	
Brinks, Henry Luke	Ill.	B.S. 1940, Wheaton College	W.Va.
A.B. 1948, Wheaton College		Brooks, James Foglestone	
Brinks, Jean Oliver	D.C.	A.B. 1949, Marshall College	D.C.
Brinks, Walter Joseph	D.C.	Brooks, Jefferson Davis III	D.C.
B.S. 1941, Georgetown University		Brooks, Joseph James	
Brinson, Milton Wilkerson	N.C.	B.S. 1946, Purdue University	D.C.
Brisebois, Joseph Francis	Va.	Brooks, Leroy William	Va.
A.B. 1917, LL.B. 1918, The George Washington University		Brooks, Milton Hope, Jr.	Va.
Bristol, William Murray	Md.	Brooks, Nellie Walker	
A.B. 1928, Franklin and Marshall College		A.B. 1940, The George Washington University	Va.
A.M. 1912, Columbia University		Brooks, Phillip Austin	Kans.
Brissette, Emile Deknon	D.C.	Brooks, Phillip Henry	Va.
Brissette, Marie Alice	D.C.	Brooks, Randall	Md.
Brisset, Doris Lawrence	Va.	Brooks, Samuel Hyman	
Briester, Orlo Francis	Va.	B.S. 1940, University of Maryland	Ohio
Bristol, Ethel Chen	Colo.	Brooks, William Bernard, Jr.	N.Y.
Bristow, John Wesley	Calif.	Brooks, William I.	Va.
Britt, Randolph	Md.	B.S. 1933, Brooklyn College	
Britt, Severine Hansenne	Va.	Brooks, William Teller	D.C.
Britt, Theodore Cleveland	Va.	Brookshire, Helen	
Britten, Edward Baylis	Md.	A.B. 1949, Louisiana State University	D.C.
Broughton, Irene Catherine	Mich.	Broome, Milton Thomas	D.C.
Brattle, David Field, Jr.	D.C.	Brosnan, Theresa Ann	Vi.
Brattle, Kathryn Skaggs	D.C.	Brosseau, Reginald George	
Britten, George Henderson	N.J.	LL.B. 1931, Northeastern University	Neb.
A.B. 1940, Miami University		Brostrup, John Oliver	D.C.
Britton, Keith George	D.C.	Brosman, Marvin Frederick	D.C.
Britton, Lewis William	D.C.	Brosen, Frances Ridgway	
Britton, Mary Martha	Mo.	A.B. 1917, The George Washington University	D.C.
Brown, Frank Clifford	Md.	Brotzen, Franz Richard	
Broadbush, Marion Loula	Va.	B.S. 1940, Case Institute of Technology	La.
B.S. 1930, Mary Washington College		Broussard, Rebecca Bennett	D.C.
A.M. 1940, University of Virginia		Browder, Frances Elizabeth	D.C.
Broadstreet, Henry Thomas, Jr.	Fla.	Brower, Helene Biringer	
B.S. 1944, University of Florida		A.B. 1938, Skidmore College	
Brobet, Donald George	Pa.	A.M. 1944, Yale University	D.C.
Brock, Ava Nell	Va.	Brown, Agnes Marie	
Brock, Xavier Martin, Jr.	N.C.	A.B. 1949, The George Washington University	Va.
Brodeur, Anne Isabel	D.C.	Brown, Alice Knowles	Va.
Brodie, Loy Hall, Jr.	D.C.	Brown, Alma Phillips	
Brodie, Zebulon Julian	Md.	A.B. 1936, Limestone College	D.C.
Brodnan, Betty Jane	Wis.	Brown, Anna M.	Va.
Brodsky, Herman	N.Y.	Brown, Barbara Jane	Ky.
A.B. 1949, The George Washington University		Brown, Ben Locke	D.C.
Brodsky, Irene Ross	D.C.	Brown, Benjamin Franklin	N.M.
		Brown, Bert Norman	

Brown, Bertha G.	Md.	Brown, Mary Parkin	Va.
Brown, Betty Gene	W. Va.	Brown, Maude D.	Ark.
Brown, Catherine Marie	D.C.	A.B. 1948, The George Washington University	
Brown, Charles Edward	Va.	Brown, Milton Henry	Va.
B.S. 1934, United States Military Academy		A.B. 1937, University of Pittsburgh	D.C.
A.M. 1948, University of Missouri		Brown, Minnie Ray	Va.
Brown, Charles Robert	D.C.	Brown, Mollie Martina	N.J.
Brown, Clarice Ballou	Md.	Brown, Morris	D.C.
A.M. in Ed. 1936, Cornell University		Brown, Orl Irene	
Brown, Curtis Leslie	D.C.	B.S. 1930, Northwestern University	La.
Brown, Daniel	N.Y.	Brown, Patricia Louise	D.C.
A.B. 1948, The George Washington University		Brown, Robert Alden	Pa.
Brown, Dennis David	N.J.	Brown, Robert Lee	Calif.
Brown, Donald Arthur	D.C.	Brown, Robert Nelson	Md.
A.B. 1949, The George Washington University		Brown, Robert William	Va.
Brown, Donald Carlton	D.C.	Brown, Ronald Lawson	S.D.
Brown, Doris Blendena	N.C.	Brown, Roy Carl	Md.
Brown, Edward Horace	D.C.	Brown, Russell Martin	Ohio
B.S. 1940, University of Utah		Brown, Stanley Wayne	
Brown, Edward John	Pa.	A.B. 1949, Ohio State University	D.C.
A.B. 1948, Muhlenberg College		Brown, Thomas Cameron	Va.
Brown, Elsie Mio	D.C.	Brown, Thomas Luther, Jr.	Va.
A.B. 1949, The George Washington University		Brown, Thomas Marion	Mo.
Brown, Emma Elise	N.Y.	Brown, Virginia Lucella	Va.
A.B. 1924, A.M. 1927, University of Colorado		Brown, Walter Louis, Jr.	Va.
Brown, Eugene Earl	Pa.	Brown, Webster Emerson	
Brown, Fanna Elizabeth	D.C.	Ph.B. 1924, Muhlenberg College	Ohio
A.B. 1948, Pennsylvania State College		Browne, David Myron	
Brown, Frank David	Ohio	A.B. 1947, Denison University	Va.
Brown, George Edward	Md.	Browne, Harry Langworthy	W. Va.
Brown, George Edward	Wis.	Browning, Helen Marie	D.C.
B.S. in Ed. 1935, Wisconsin State Teachers College, Eau Claire		Browning, Jack Arthur	D.C.
M.S. 1944, University of Colorado		Browning, Preston Calvin	N.J.
Brown, Harvey Lloyd, Jr.	Va.	Brownson, Ernest Mastland	Va.
B.S. 1938, United States Military Academy		Brownson, Robert Henry	
Brown, Herman Cuthbape	Del.	B.S. 1948, John Carroll University	Fla.
A.B. 1948, University of North Carolina		Brownstein, Dora	N.Y.
Brown, Imogene Elizabeth	Va.	Brownstein, Herman	Va.
A.B. 1931, Oklahoma State Teachers College		Brox, Beverly Hite	Va.
Brown, James Clinton	N.Y.	Brox, James William	Va.
Brown, James Grady	Md.	Brox, Walter Leon	Wash.
A.B. 1948, The George Washington University		Brox, Richard Francis	D.C.
Brown, James Robert	Conn.	Brubaker, Robert Lee	Mass.
Brown, James Webster	Md.	Bruce, Charles Warren	Md.
Brown, Jean Shea	D.C.	Bruce, Clayton Roy	
Brown, Joan Lucile	D.C.	B.S. 1946, University of Pittsburgh	D.C.
Brown, John David	D.C.	Bruce, James Crawford	Mich.
Brown, Kenneth Ray	D.C.	Bruce, John Charles	Md.
Brown, Laurence Ray	Colo.	Bruce, Travey Kirtz	Okl.
B.S. in Eng. 1949, The George Washington University		Bruce, William Averett	D.C.
Brown, Lee Berry	Md.	Bruce-Briggs, Florence James	D.C.
Brown, Lewis Donald	W. Va.	Bruchie, Robert Joseph	D.C.
Brown, Luther Adolphus, Jr.	D.C.	Bruffey, Albert Henry	D.C.
Brown, Margaret Gould	Va.	Brugioni, Dino Anthony	D.C.
B.S. 1933, Farmville State Teachers College, Va.		A.B. 1947, A.M. 1948, The George Washington University	
Brown, Margaret Joan	D.C.	Bruin, Mackall Virginia	Va.
B.S. 1942, Wilson Teachers College	D.C.	Brumback, Frances Smither	Va.
Brown, Martin John	Ark.	Brumbaugh, William Robert	D.C.
B.S. in Ch.E. 1948, Purdue University		Brunauer, Sander	Hungary
Brown, Mary Kathryn	W. Va.	Dr. of Jurisprudence, 1928, University of Peas, Hungary	
		Bruner, Grace Elizabeth	Va.
		Bruner, Rachel Alice	Md.
		Brunk, Herman George	D.C.
		Brunner, Gerti Landauer	Va.
		A.B. 1940, University of California	
		Brunner, Junius Howard	Va.
		Bruno, Joseph Frank	Conn.
		B.A.E. 1944, M.A.E. 1947, New York University	
		Bruns, Katherine Vivian	N.Y.

Brunson, Woodrow W. A.B. 1911, Spring Hill College	Ala.	Buckley, Daniel John	D.C.
LL.B. 1917, Georgetown University		Buckley, Ralph Edward	Va.
Brusloff, Leova	Md.	B.S. 1918, Virginia Polytechnic Institute	Va.
Bruskia, Leo	Conn.	Buckley, Robert Baldwin	
A.B. 1949, The George Washington University		B.S. 1949, The George Washington University	D.C.
Bruss, Otto Henry	Va.	Buckman, William Boyd	
Brust, George A.	Md.	B.S. 1947, University of Maryland	Pa.
Brust, Nora May Trittipos	D.C.	Buckmaster, George Walton	Mass.
Bruton, Sally Ann	Va.	Bucknam, Bettina	
Bryan, Elmer Fred. Jr.	Md.	A.B. 1940, Stanford University	D.C.
Bryan, Ferguson Beach	Va.	Buckner, Thelma M.	D.C.
B.S. 1919, United States Naval Academy		Buckner, Wila M.	Mo.
Bryan, James Edward	Md.	Buckner, William Coles	Va.
B.S. 1945, M.S. 1946, Virginia Polytechnic Institute		Budke, Dorothy Helen	Pa.
Bryan, Jean	D.C.	Budsock, Leonard Edmund	Mass.
Bryan, Kit	N.C.	Budz, Henry Richard	Neb.
B.E.E. 1911, M.S. 1932, North Carolina State College		Buechle, C. Town	N.Y.
Bryan, Ralph H.	D.C.	Bueg, Emily Josephine	Pa.
Bryan, Raymond Joseph	Mo.	Buehler, Norman Conrad	N.Y.
Bryan, Ruth Louise	D.C.	Buehle, Cyril Anthony	D.C.
Bryan, Truman Grove	D.C.	Buel, Helen Powers	D.C.
Bryan, William C.	D.C.	Buell, Douglas Macleod	N.Y.
B.S. 1940, Oklahoma Agricultural and Mechanical College		Buery, Joseph Francis	N.Y.
Bryant, Frederick David	Fla.	Buettner, William Robert	
A.B. 1946, University of Florida		A.B. 1949, Dartmouth College	Okla.
A.B. in L.S. 1947, Emory University		Buffalohide, Homer Joseph, Jr.	N.H.
Bryant, Horace Andrew	D.C.	Bugala, John Anthony	D.C.
Bryant, Lucy Nell	Ga.	Buhl, John Maurice	Va.
Bryant, Mary Lucille	Ala.	Buhrman, Jacqueline Chevallaz	
Bryant, Nola Wingo	Va.	A.B. 1944, The George Washington University	
B.S. in Ed. 1927, University of Tennessee		A.M. 1946, Columbia University	Va.
Bryant, Ralph Lee	Mo.	Buhrman, Lloyd William	
B.S. 1949, University of Missouri		A.B. 1930, A.M. 1941, Washington University	Tex.
Bryce, Anna Lee	Fla.	Buldain, Frank Javier	
A.B. 1948, University of Florida		A.B. 1931, LL.B. 1935, Baylor University	Ind.
Bryde, Georgia Rea	Md.	Bull, Barbara Ann	
Brydon, Wilson P.	D.C.	B.S. in Ed. 1947, University of Miami	Ala.
A.B. 1947, West Virginia Wesleyan College		Bull, Frate, Jr.	D.C.
Bryner, Joyce Louise	Ohio	Bulla, William Lawrence	D.C.
Brzozowski, Edmund	Mass.	Bullen, Bryant Jacobs	Va.
Bucar, Erika	D.C.	B.S. 1948, University of Utah	
Bucci, Dominick Anthony	N.J.	Bullen, Jacob Thompson, Jr.	
Buchanan, Katherine Donnell	Ark.	B.S. 1944, United States Naval Academy	D.C.
A.B. 1946, Tulane University		Bullis, William Francis	
Buchanan, Mary Beverly	Fla.	B.S. 1924, United States Naval Academy	Va.
Buchanan, William Walter	D.C.	Bullock, Barbara Ann	D.C.
B.S. 1949, Georgetown University		Bullock, Frederick Allyn	D.C.
Buchhett, John Robert	Minn.	Bullockus, Theodore	
B.S. 1929, Hamline University		A.B. 1949, A.M. 1950, The George Washington University	Md.
Buchholz, Edward Walter	Conn.	Bullough, John Frank	D.C.
Buchman, Daniel	N.Y.	Bulman, Grace M.	
Buchsaum, David Jule	N.J.	B.S. 1924, Columbia University	Ill.
Buck, Barbara Lou	Va.	Bultman, John Dale	
Buck, Donald Alden	D.C.	B.S. 1950, The George Washington University	Va.
Buck, Dudley Allen	Calif.	Bumer, Charles Theodore, Jr.	Va.
B.S. in E.E. 1948, University of Washington		A.B. 1947, Cornell University	Va.
Buck, Fred Everett	Va.	Bumgardner, Edward L.	
Buck, Samuel Otho	D.C.	A.B. 1948, The George Washington University	Va.
Buckberg, Morton L.	D.C.	Bunch, John Sevier	D.C.
Buckler, James Leonard	Va.	Bundock, John Paul David, Jr.	
A.B. 1944, The George Washington University		B.S. in E.E. 1948, Tufts College	
Buckley, Betty Jean	D.C.		

Buneyich, Irving	N.J.	Burks, Harold Allen	Va.
B.S. 1934, United States Naval Academy		Burleson, Carl Edward, Jr.	Fla.
L.L.B. 1930, The George Washington University		A.B. 1927, Washington and Lee University	
Bunge, Martha Susan	D.C.	Burkhamme, Claude Edgar	D.C.
Bunker, Grace Isabella	Md.	Burnam, John Richard	Md.
Burke, Joseph Bridgide, Jr.	Md.	Burnap, Courtney Noble	Mass.
Bruce, Mybel Angela	Mass.	A.B. 1928, Bates College	
Burton, Elizabeth	D.C.	Burnet, Arthur Russell	N.Y.
A.B. 1930, The George Washington University		A.B. 1932, Oberlin College	
Burt, Clyde Ellis	D.C.	Burnett, Allen Frederick	Ill.
Burtine, Gwenneth Ann	D.C.	Burnett, Lloyd Calvin	Va.
Burton, Warren John	N.J.	Burns, Bland Calvin	Mass.
Bush, Laura Belle	D.C.	Burns, Catherine Rita	Md.
Bustomo, Rozalia Mercedes	Puerto Rico	Burns, Donald Frances	
Burak, Hugh	N.Y.	B.S. 1931, Indiana University	
Burck, Stanley	Pa.	Burns, Edward Joseph	D.C.
Burch, Jacqueline Diane	Va.	Burns, Eugene Joseph	N.J.
Burch, James Franklin	N.C.	Burns, Francis Henry	Pa.
Busham, John Bartlett, Jr.	D.C.	Burns, Francis Jerome	Mass.
Bushard, Kathryn Anne	N.J.	Burns, Robert Emory	D.C.
Burchette, Herbert Lee	Va.	Burns, Robert Joseph	Mass.
Burfield, Bess Hunt	W.Va.	Burns, Robert Lee	D.C.
B.S. in Ed. 1941, Madison College		A.B. 1939, The George Washington University	
Burdeau, Homer Philip	Mass.	Burns, Robert Samuel	D.C.
Burdett, Melvin	D.C.	Burns, Thomas William Edward	W.Va.
Burdette, Frances Shirley	Md.	Burns, Walter William, Jr.	N.Y.
Burdette, Frances Ryan	Va.	B.L.L. 1942, Cornell University	
Burdick, Lorna Nell	Conn.	L.L.B. 1949, The George Washington University	
A.B. 1929, The George Washington University		Burr, Lavern Harold	Va.
Burford, Frank Page	Va.	A.B. 1927, Butler University	
Bursee, Miel Dav	Md.	Burr, William Norvell	D.C.
B.S. 1927, University of Maryland		Burton, Dale Eugene	Md.
A.M. 1937, Columbia University		Burns, Robert Eugene	Ill.
Burger, Joel Arthur	N.Y.	Burroughs, George Molyneux	D.C.
Burgess, Eileen Elizabeth	Mo.	Burrow, Rhea Mearns	Tenn.
Burgoff, Lillian	D.C.	A.B. 1937, Transylvania College	
Burians, Cynthia Constance	Va.	L.L.B. 1930, Georgetown University	
Burk, Paul William, Jr.	D.C.	Burrow, William Gordon	D.C.
Burk, Price Fern	Mo.	Burrows, Thomas	D.C.
Burka, Leon Harry	D.C.	B.S. 1925, United States Naval Academy	
Burke, Calvin Roscoe	D.C.	Burson, Edna Ruth	Miss.
Burke, David Francis	N.Y.	Burstein, Lloyd Mitchell	La.
Burke, David Moncrief	Va.	A.B. 1944, University of California at Los Angeles	
B.S. 1946, University of Virginia		Burt, June Delores	D.C.
Burke, Elizabeth Billings	D.C.	Bustner, Roy Hoffmann, Jr.	D.C.
B.S. 1939, M.S. in Ed. 1941, Temple University		Burton, Charles Junior	D.C.
Burke, George Anderton	Va.	Burton, George, Jr.	N.J.
Burke, James Andrew	D.C.	B.S. in Met. E. 1950, Virginia Polytechnic Institute	
Burke, James Freemont	D.C.	Burton, Frances Adams	D.C.
Burke, James Lausing, Jr.	Md.	Burton, Joseph John	Va.
Burke, John Edward	Va.	Burton, Lockwood Duquesne	D.C.
Burke, John Grant	Va.	Burton, Phyllis June	D.C.
Burke, Joseph	Pa.	Burton, Rucely Mary	D.C.
Burke, Joseph Augustus III	D.C.	Burton, Robert Lee	Md.
Burke, Kenneth Stanley	D.C.	Burton, William Miles	D.C.
Burke, Marian Elaine	D.C.	Burwell, Ann Hutson	D.C.
Burke, Rita Marie	D.C.	Burwell, Nathaniel Turner	D.C.
B.S. E. in M.E. 1932, Boston Teachers College		Busby, Andrew Lytleton	Miss.
Burke, Stephen Patrick II	D.C.	A.B. 1922, Mississippi State College	
A.B. 1949, Columbia University		Busch, Inez Lorraine	N.Y.
Burke, Thomas Joseph	Va.	B.S. 1949, University of Rochester	
Burke, William Driscoll	Va.	Buscher, James Ralph, Jr.	Va.
Burkert, Alfred, Jr.	N.J.	Buschmeyer, Frederick Sherman	N.H.
Burks, Craushill Stoner	Va.	Bush, Barbara Ann	N.Y.
B.S. 1941, Hampden-Sidney College		Bush, Dorothy Louise	Fla.
Burks, Elizabeth Butler	Va.	A.B. 1946, Florida State College	
Burks, George Edward, Jr.	D.C.		

Bush, Harry Leonard	Ala.	Cable, Jesse Franklin	Calif.
B.S. 1940, Alabama Polytechnic Institute		Cadeaux, Ralph Helale	D.C.
Bush, Jeremiah Estell	Pa.	A.B. 1940, The George Washington University	D.C.
Bush, Joseph Francis	D.C.	Cafferty, Patrick Joseph	D.C.
B.S. 1917, Mount St. Mary's College		Caffes, Peter James	Ga.
Bushmaier, William Pryor	D.C.	Caffey, Helen Mead	Va.
Bushnell, Richard	Ind.	Caffrey, James Anthony	Pa.
B.S. in M.E. 1948, Purdue University		Caffrey, Mary Margaret	Wis.
Bushong, Wendell Edgar	Md.	Cafisch, Frank Albert	Ga.
Bushito, Richard Edward	Pa.	Cagle, Anna Leonora	Ga.
Busits, Louis Frank	Pa.	Cagle, Sherman Clinton	N.Y.
Buss, Janette Marilyn	Va.	Caigostro, Frank Michael	D.C.
Bussard, Gale Ernest	Md.	Cahan, Jules Isaac	
Bussey, Alfred Gordon	Va.	B.S. 1949, The George Washington University	
Bussey, Howard Emerson	Md.	Caherty, Eileen A.	Md.
A.B. 1943, The George Washington University		Cahill, Helen R.	D.C.
Bussler, John McCrossin	D.C.	B.S. 1928, Iowa State College	Md.
Bussler, Robert Bruce	D.C.	Cahn, Frank Bernard II	D.C.
Butcher, David Frederick	Va.	Cahoon, Lillian Adelaide	Va.
Butcher, Harold Kenneth	Calif.	Cahoon, Lynda Lee	W.Va.
Butcher, William Elden	Md.	Cain, Beryl Virginia	Ill.
Butterbaugh, Charles C., Jr.	D.C.	Cain, Billy Wayne	D.C.
Butterbaugh, Charlotte Anne	D.C.	Cain, George Donald	D.C.
Butkus, Carl John	Pa.	Cain, George Stephen	Md.
B.S. 1949, The George Washington University		Cain, John Wallace	Wis.
Butler, Alva Eugene	D.C.	Cain, Thelma Shirley	D.C.
Butler, Charles Edward	Mass.	Cain, William Bell	Ind.
Butler, Claude Lee	Tenn.	Cain, William Morris	W.Va.
Butler, Miriam Luella	Calif.	Caine, Tracy Matthew	
A.B. 1936, University of Nevada		B.S. 1949, Georgetown University	D.C.
Butler, Raymond Thompson, Jr.	Calif.	Cainias, Paul Anthony	D.C.
Butler, Richard Frank	D.C.	Caldwell, Edward Richard	Va.
Butler, Thomas Edward	Md.	Caldwell, Margaret	Tenn.
Butler, William Clayton, Jr.	Va.	Caldwell, Randolph Foster, Jr.	Ind.
B.S. 1930, United States Naval Academy		Caldwell, Wilfred Gene	
Butler, William Powers	D.C.	B.S. in E.E. 1945, M.S. in E.E. 1948, Purdue University	W.Va.
B.S. 1949, Georgetown University		Calhoun, William Harper	D.C.
Butt, Frederick Christian	Va.	Callahan, Frances Goldard	Calif.
Butt, Minerva Alice	Md.	Callahan, Edward Cooper	N.Y.
Butterfield, Sara Barbara	Calif.	Callahan, John Francis	Pa.
A.B. 1917, Whittier College		Callahan, John Joseph	Tenn.
Buttermore, Mildred K.	Tex.	Callahan, Martha Anne Howard	
A.B. 1930, Texas Christian University		A.B. 1949, The George Washington University	Va.
Button, Dale Leon	Kans.	Callan, Bernard Aloysius	Md.
Button, Ronald Earl	Ill.	Callander, Ann Deeley	Md.
A.B. 1916, Northwestern University		Callander, Chester Lee	
Butts, Dorothy I.	Iowa	A.B. 1940, University of California	Minn.
Butts, Lee Garland	Va.	Callander, Donald Bruce	Okl.
Butts, William Arlonby	Va.	Callaway, Charles Calvin	
Buzzell, Donald Nian	Va.	A.B. 1949, The George Washington University	
Buzzell, Robert Don	Va.	Callaway, Hugnette Vander Hoeghe	Belgium
Byer, Seymour	Conn.	Callaway, Joseph Easterling III	Va.
Bykolsky, Joseph	D.C.	Callaway, Mariella McCown	Okl.
B.S.S. 1941, College of the City of New York		Callegary, Claude Leon	Md.
A.M. 1943, Columbia University		Callow, John Henry	D.C.
Byles, Robert Stanley	Va.	Calloway, James Richard	Del.
Byrne, Eugene Aloysius	D.C.	Caltoway, Rower	D.C.
Byrne, Francis Artaud, Jr.	D.C.	Calomeris, George	Va.
Byrne, James Anthony	N.Y.	Calow, Paul Emerson	
Byrne, Michael Joseph	N.Y.	B.S. in M.E. 1944, University of Minnesota	Pa.
Byron, James Edgar	D.C.	Calverley, Wesley Skilton	
A.B. 1940, Princeton University		B.S. 1937, United States Military Academy	Pa.
Byron, Robert Milton	Va.	Calvin, Charles Joseph	D.C.
Bywater, Maurice John	Va.	Camarot, Henry Jules	Conn.
		Cambosso, Nicholas Michael	
C			
Cable, Frank Gilbert	N.Y.		
Cabeza, Diana	N.Y.		

Camby, John Joseph B.S. 1941, Carnegie Institute of Technology	Pa.	Campbell, Sheila Elizabeth	D.C.
Camelio, Joseph Albert	N.Y.	Campbell, Thomas Kelly	N.C.
Cameron, Astor Elias B.S. in Comm. 1941, Ferris Institute	D.C.	Campbell, William Arlin	Tenn.
Cameron, Betty Jean	D.C.	Campbell, Yolanda Azoni	D.C.
Cameron, Frank Conover	Pa.	Campson, Harold Joseph	Iowa
A.B. 1942, University of Michigan		Campo, Victor Charles	Vt.
Cameron, John William A.B. 1942, The George Washington University	D.C.	A.B. 1948, The George Washington University	N.Y.
Cameron, William Kimmel A.B. 1948, LL.B. 1950, The George Washington University	Ohio	Canady, William James B.S. 1946, Fordham University	Ky.
Cansfield, Thornton John	Md.	Canafax, Everett Daniel	Pa.
Cammer, Margaret Ann B.S. 1948, M.S. 1949, The George Washington University	Va.	Canan, James Franklin A.B. 1947, Haverford College	D.C.
Camp, Glen Darwin	Md.	Canby, Melburn Parr	Md.
Camp, Victor William	R.I.	Candless, Paul Joseph	Wash.
Campagna, Ignatius Edward	Va.	Carbano, David William, Jr.	Pa.
Campagna, Joseph Henry	D.C.	Cann, Philip Winston B.S. 1942, United States Naval Academy	Md.
Campagna, John Paul B.S. 1948, Mansfield State Teachers College, Pa.	D.C.	Cannon, John Andrew	Pa.
Campante, Lewis Frank	Va.	Cannon, Thomas David	D.C.
Campbell, Ann Abel	D.C.	Cannon, Warren H.	N.C.
Campbell, Arthur Bernard, Jr.	Va.	Canton, Humbert John, Jr.	S.C.
Campbell, Barbara	D.C.	Cantley, Thomas William	N.Y.
B.S. 1948, Capital University		Cantor, Bernard J. B.M.E. 1949, Cornell University	D.C.
Campbell, Charles Edward B.E.E. 1949, The George Washington University	Va.	Cantor, Neil Jay	D.C.
Campbell, Charles Edwin	Ky.	Cantrell, James Muir	Ky.
Campbell, Charles Frederick	N.J.	Cantrelle, Chester Orin A.B. 1948, University of Utah	N.Y.
Campbell, Charlotte Catherine	Va.	Cantwell, William James A.B. 1949, The George Washington University	D.C.
Campbell, Donald Allen	D.C.	Canty, Owen Joseph	Mass.
Campbell, Donald Herman	D.C.	Canella, Guido John	Va.
Campbell, Donald Hugh	Conn.	Capel, Marie Watkins	D.C.
Campbell, Edmund Douglas, Jr.	Va.	Caplan, Joel Bernard A.B. 1949, State University of Iowa	Nev.
Campbell, Frances Myrl B.S. in Ed. 1942, Indiana State Teachers College, Pa.	Va.	Caples, Willis Harry B.S. in P.E. 1946, University of Oregon	D.C.
Campbell, Francis Walter Ed B. 1946, Rhode Island College of Education	R.I.	Caplin, Vincent Anthony, Jr.	N.Y.
Campbell, James Joseph	D.C.	Capocassale, Eugene A.B. 1947, Columbia University	N.J.
Campbell, James Leonard	Pa.	Capozzi, Lucille Marie A.B. 1948, Rutgers University	N.J.
Campbell, James Vincent	D.C.	Capp, John Walter	N.Y.
Campbell, Jean Wilma	Va.	Cappello, Giacomo	D.C.
Campbell, John Elmer	Md.	Capps, Anna Joyce	N.Y.
Campbell, John Howard	Md.	Carabba, Frank	Pa.
Campbell, John Keith	Mass.	Carabba, Pat	D.C.
Campbell, John Patrick	D.C.	Caraculio, Francis Samuel	D.C.
Campbell, John Wesley	D.C.	Caraculio, Leonard Dominic	Va.
Campbell, Lawrence Alois A.B. 1939, M.B.A. 1941, Harvard University	N.Y.	Caran, Frank Louis, Jr.	West Indies
Campbell, Margaret Elizabeth	Ohio	Carballe, Caridad Mercedes	D.C.
Campbell, Mary Dyer A.B. 1919, Randolph-Macon Woman's College	Va.	Carbenagna, Richard William	Md.
Campbell, Mildred Ann	D.C.	Cardano, Ferdinand Sebastian	D.C.
Campbell, Paul Calvin A.B. 1938, Ed.M. 1939, Pennsylvania State College	Pa.	Cardillo, Joseph Phillip	Mass.
Campbell, Robert Alexander, Jr.	N.J.	Casey, Marjorie Lucia	N.H.
Campbell, Robert Russell B.S. in C.E. 1940, University of California	Va.	Carey, Patrick Francis	Md.
M.B.A. 1949, Harvard University		Carl, Albert Clement	Mass.
		Carleton, Lois Chute A.B. 1943, College of Our Lady of the Elms	Va.
		Carlin, John Francis	Va.
		Carlisle, Patricia Anne	D.C.
		Carlson, Guy M. Dowell	Va.
		Carlson, Betty Lou	Va.
		Carlson, Carl Arthur B.S. in M.E. 1938, Tufts College A.M. 1941, Boston University	D.C.
		Carlson, Charles Eric	

Carlson, Dorothy Sandison	D.C.	Carroll, Nicholas Vincent	Pa.
B.S. 1936, Northwest Missouri State College		B.S. 1948, Geneva College	Va.
Carlson, Herbert Donald	Md.	Carroll, Norman Sellman	
Carlson, Howard Kenneth	D.C.	A.B. 1940, The George Washington University	Mass.
A.B. 1949, The George Washington University		Carroll, Richard Stephen	Md.
Carlson, Jeanne Elizabeth	Iowa	Carroll, Thomas Francis, Jr.	
Carlson, Randolph Adair	Md.	B.S. 1948, Georgetown University	D.C.
A.B. 1948, Brown University		Carroll, Thomas Theodore, Jr.	Ala.
Carlson, Theodora Elizabeth	Nebr.	Carroll, Virginia Des	Ala.
A.B. 1936, Wayne State Teachers College, Nebr.		Carroll, Will Herman	
Carlson, Walter Loren	Nebr.	B.S. 1946, LL.B. 1948, University of Alabama	D.C.
B.S. 1949, University of Nebraska		Carroll, William Joseph, Jr.	Fla.
Carlson, Harry Nelson	D.C.	Carsey, Juanita Anderson	D.C.
B.S. 1949, The George Washington University		Carson, Arthur Nacole	
Carlton, Virginia May	Mass.	B.S. 1944, California Institute of Technology	Va.
Carman, Harry Ayres	Va.	Carson, Joseph Malcolm	D.C.
Carman, Hazelmarie Clinkenbeard	Calif.	Carson, Martha Yarrington	D.C.
Carmichael, Donald	D.C.	Carson, Robert Paul	D.C.
Carmichael, William Edward	Va.	Cartee, Elisabeth	Fla.
Cerne, William Benton	Tenn.	Carter, Anne Baxley	
B.S. in B.A. 1949, University of Tennessee		A.B. 1946, Florida State University	Ill.
Cernel, Owen Haskins	Va.	Carter, Darrell Deaneale	
Carnes, Raymond Eugene	Md.	A.B. 1949, The George Washington University	Va.
A.B. 1947, The George Washington University		Carter, Elizabeth Carsey	D.C.
Carnivale, Caroline	N.Y.	Carter, George Washington	
Carof, Sybil Phyllis	N.Y.	A.B. 1948, The George Washington University	Va.
Caron, Anna Mae	Ohio	Carter, Harold Martin	
Carothers, Constance Olive	Mass.	B.S. 1942, Roomake College	D.C.
Carpenter, Agnes Proffitt	Va.	Carter, Helen Russell	Md.
A.B. 1945, De Pauw University		Carter, Jennie Malin	
Carpenter, Anita Jean	Va.	B.S. in Ed. 1941, University of Louisville	D.C.
Carpenter, Charles Stanley	Va.	Carter, Margaret Ann	D.C.
Carpenter, Edwin John, Jr.	D.C.	Carter, Philip Richard	Va.
Carpenter, Gladys Rosemary	Fla.	Carter, Robert Edward	
Carpenter, Richard Edison	Md.	B.S. 1942, Davidson College	Va.
A.B. 1948, Dartmouth College		Carter, Russell Kenneth	N.Y.
A.M. 1949, Columbia University		Carter, Sidney	
Carpenter, Robert Dollar	D.C.	B. of Ch.E. 1942, College of the City of New York	Va.
Carpenter, William Otis	Va.	Carter, Thomas Victor	Ill.
Carpentier, Patrick Louis	Md.	Carter, Virginia Adair	Va.
Carpino, Salvino Francis	Mass.	Carter, William Joseph	
Carr, George Lafayette	Ga.	A.B. 1949, The George Washington University	D.C.
Carr, Mary Margaret	Ohio	Carter, Woodbury	
Carr, Max Wayne	Mo.	B.S. 1945, United States Military Academy	D.C.
Carr, Robert Addison	Calif.	Carteret, George Minor	N.Y.
B.S. 1932, Ohio State University		Cattin, Thomas Joseph	Mass.
Carr, Robert Studor	Md.	Carroll, Leonard	
Carr, Stuart	Md.	A.B. 1949, The George Washington University	N.Y.
Carr, William Hoyt	S.C.	Caruso, Anthony John	N.J.
B.S. 1948, Furman University		Caruso, Lawrence Robert	
Carr, William Larwill	Ohio	A.B. 1949, The George Washington University	N.J.
Ph.B. 1949, Kenyon College		Caruso, Mollie Jean	Va.
Carr, William Racoffort	Md.	Caruthers, Chester Preston	Va.
Carrara, Daniel Anthony	N.Y.	Carvallas, Georgia	D.C.
Carrell, Thelma Leasetta	D.C.	Carvallas, Perry	Conn.
Carrick, Lester Forest	Md.	Carver, William Franklin	D.C.
Carrier, Craig	Ky.	Carville, Lewis Everett	
Carrig, Rome John	D.C.	A.B. 1948, American International College	
Carrillo, Abelardo B.	Philippines	A.M. 1949, Boston University	
B.S. in C.E. 1950, State University of the Philippines			
Carroll, Douglas Stewart	N.Y.		
Carroll, Jack Everett	D.C.		
Carroll, Mary Josephine	Tenn.		
A.B. 1931, Maryville College			
A.M. 1948, The George Washington University			

Cary, Carolyn Ray B.S. 1931, Emporia State Teachers College, Kansas	Va.	Cavallo, Frank Nicholas	Mass.
Cary, George Lee, Jr. A.B. 1949, University of Maryland	Md.	Cavallo, Guglio Frank	Conn.
Casalet, John Peter	Calif.	Cavallo, Guido	Mass.
Cassanova, Arturo Ynocencio	D.C.	Cavan, William Eugene	N.C.
Casas, Ricardo Jose	D.C.	A.B. 1948, Guilford College	Oreg.
Case, James Sanford	Va.	Cavanagh, John Edward	Ill.
Case, Matalce Talburt	Md.	A.B. 1941, University of Oregon	Ind.
A.B. 1927, A.M. 1929, Ph.D. 1931, The George Washington University	Ill.	Cavanagh, Thomas Edward, Jr.	Pa.
Castelon, Paul Nicholas		Cavanaugh, John Patrick	N.J.
A.B. 1949, The George Washington University		Cavanaugh, Vincent DePaul	Md.
Casera, Armando	Va.	B.S. 1940, Pennsylvania State College	N.Y.
A.B. 1941, Colgate University		Cawley, Eugene Horan	Md.
A.M. 1947, New York University		Cawood, Mary Alice	N.C.
Carey, Ann Donnelly	Oreg.	Cearley, Landis Powell	Ky.
Cusey, John Brendan	D.C.	Ceal, Howard	D.C.
Cusey, John Hugh	Va.	Cederstrand, Carl Nelson	D.C.
Cusey, John Joseph	Pa.	Celenza, Josephine Mary	N.Y.
Cusey, Lloyd Bernard	Mass.	Centra, Anthony Francis	Md.
Cash, James Barrett, Jr.	Ark.	Cella, Roland Peter	D.C.
Cashatt, Vanhrie Lorraine	Mo.	Cerami, Charles August	D.C.
Cushman, Robert William	Pa.	B.S. 1942, Georgetown University	D.C.
Caslin, James Michael	D.C.	Cerami, Ruth Naele	D.C.
Cason, Vivian Jamie	Fla.	A.B. 1944, The George Washington University	Md.
Caspar, William Charles	D.C.	Cerda, James John	N.Y.
B.A.E. 1943, Catholic University of America		Cerf, Fred Robert	N.C.
Casedy, James William III	Va.	A.B. 1949, New York University	Mo.
Casely, Vesta	Md.	Cerick, Peter Aull	Va.
B.S. 1942, University of Maryland		Cerne, Rose Ann	N.Y.
Cassell, Irvine Seymour	N.Y.	Cerny, Labuse	N.J.
Cassell, Sanford Charles	Md.	A.B. 1938, University of Texas	D.C.
Cassidy, James Donald	D.C.	Cerra, Arthur Joseph	
Cassidy, Lewis Cochran	D.C.	Cerstvik, Milan Stephen	
Cassidy, Sally Ann	D.C.	Cervantes, Robert Martinez	
Cassin, Vernon	Mich.	A.B. 1949, The George Washington University	Pa.
A.B. 1941, Wayne University		Cesare, Leo Louis	Pa.
Cassity, Donn Edward	Utah	Chabak, Joseph Thomas	Va.
Cassou, Bertin Michel	D.C.	Chabinak, Lillian Hutchison	
Castle, Evelyn Starr	D.C.	B.S. 1949, Salisbury State Teachers College, Md.	W.Va.
Castro, Anthony Joseph	D.C.	Chacatos, Sophia Z.	D.C.
Caswell, Robert Little	Calif.	Chaconas, Frances	Va.
B.S. 1939, University of California		Chacos, Anthony	D.C.
Catalan, Ruth Virginia	D.C.	Chacos, Maria George	
A.B. 1942, Dunbarton College	D.C.	A.B. 1949, The George Washington University	D.C.
Catalina, Stephen Patrick	D.C.	Chacos, Nicholas George	D.C.
Cater, Charles John	Va.	Chacos, Theresa	N.Y.
B.S. 1922, United States Naval Academy		Chad, Seymour Walter	
M.S. 1930, Pennsylvania State College		A.B. 1948, University of California at Los Angeles	Md.
Cates, Lorraine B.	Md.	Chadwick, Eleanor M.	Va.
Cates, Mary F.	Tex.	A.B. 1942, University of Maryland	N.H.
Catington, Winnifred Coberly	Md.	Chadwick, William Edward	
A.B. 1940, Western Maryland College		Chagnon, Cecile Lydia	D.C.
M.Ed. 1949, University of Maryland		A.B. 1948, Xavier College	D.C.
Catlin, John Edward, Jr.	Va.	Chakeres, Anita	D.C.
Catterall, Logan Virgil	Iowa	Chakeres, Pauline George	
Catterton, Conn Dewitt	Va.	A.B. 1949, College of William and Mary	D.C.
A.B. A.M. 1935, University of Texas		Chakeres, Pete	D.C.
Caulfield, Donald John	N.Y.	Chamberlain, Nelson Horatio, Jr.	Md.
Caulfield, Mildred V.	D.C.	Chamberlin, Guy Wadsworth	D.C.
Caulfield, Samuel Joseph	Va.	Chamberlin, John Marloek	Md.
Cavagrotti, Victor John	Va.	Chambers, Ann Douglas	D.C.
Cavallaro, Augustine Louis	Conn.	Chambers, Curtiss Nelson	D.C.
Cavallaro, Velma Antoinette	N.Y.	Chambers, Gervaise Broadbuss	Md.
Cavallo, Anthony Joseph	Ariz.	Chambers, Kennon Frederick	W.Va.
A.B. 1939, Lafayette College		Chamch, Souhad Mersi	Lebanon
		B.B.A. 1945, M.B.A. 1946, American University of Beirut, Lebanon	

Champagne, Maurice Anthony	La.	Chaastain, Billy Fed	D.C.
B.S. 1934, Louisiana State University		Chatelan, Diane Louise	Va.
Champion, Clarence Paul, Jr.	Ga.	Chauvette, Louis Michael	Mich.
Champion, Lillian Geneva	D.C.	A.B. 1949, Catholic University of	
Chan, Calvin B.	Calif.	America	
Chan, Chong Kwok	China	Chavez, Mary Armijo	N.M.
Chan, May	D.C.	Chazin, Sheldon	N.Y.
Chanatry, Francis	N.Y.	B.B.A. 1949, College of the City of	
M.D. 1948, Albany Medical College		New York	
Chance, Anthony Nicholas	N.J.	Checchia, Maria Katherine	D.C.
Chandler, Alfred White, Jr.	Md.	Checkoway, Abraham	Va.
Chandler, Archie Lee	D.C.	Chedester, John T.	W.Va.
Chandler, Joseph Merritt, Jr.	Va.	Chedusau, Nestor Edmundo	D.C.
Chanel, Weymer Lee	Va.	Cheesman, George LeRoy	D.C.
Chaney, Anne	D.C.	Cheezum, Helen Alberta	Md.
A.B. 1948, Hood College		B.S. 1945, State Teachers College,	
Chaney, James William	D.C.	Salisbury	
A.B. 1949, Catholic University of		Chemerow, Ben-Ami Samuel	D.C.
America		B.S. 1949, University of Wisconsin	
Chaney, John Lester, Jr.	D.C.	Chen, Bu-Shing	Va.
Chang, Chien Chung	China	Chennault, Joe Young	La.
A.B. 1934, National Peking Uni-		Chernosky, Edwin J.	Tex.
versity, China		Chernuchin, Paul	N.Y.
Chang, Ching Gwan	D.C.	A.B. 1947, University of Michigan	W.Va.
Chang, Richard I-Feng	China	Cherrington, Jane Bell	D.C.
A.B. 1943, St. John's University,		Cherry, John Claxton, Jr.	N.Y.
China		Chertoff, Mitchell	Pa.
LL.B. 1949, DePaul University		Chertok, Leonard	Pa.
LL.M. 1949, The George Washington		Chervenak, John	
University		B.S. in E.E. 1934, Carnegie Institute	
Chang, Shih Ju	D.C.	of Technology	
Chaplin, Harvey Reese, Jr.	Va.	M.S. in Ed. 1946, University of	
Chapline, Claudia Beechum	Tex.	Pittsburgh	
Chapline, Mary Adeline	Va.	Cherwek, Stanley	Mass.
Chapman, Allyn Dean	Va.	A.B. 1949, The George Washington	
Chapman, Charles William	Va.	University	Va.
Chapman, David Graham	Pa.	Chesley, Emory Willard	
Chapman, Edward Joseph		A.B. 1948, Western Maryland College	N.Y.
A.B. 1949, Loyola University		Cheslow, Ernest	
Chapman, Elsie Janet	Ind.	B.Ch.E. 1939, College of the City of	
B.S. 1936, Butler University		New York	
Chapman, Winifred LaVerne	Va.	Chesney, Daniel Roger	D.C.
Chapnick, Phyllis Lee	Md.	Chesnut, Robert Thomas Norman	Tex.
Chappel, Martha Ella	Colo.	Chester, Annabelle Johnnie	Calif.
Chappell, Elizabeth McGaw	Tenn.	Chester, Edward H.	Va.
Chapper, Frank Morris	D.C.	Chester, Russell Gilbert	Ohio
Charles, Frederick Isaac	Pa.	A.B. 1948, Baldwin-Wallace College	D.C.
Charnes, Leah	D.C.	Chestnutt, Warren Lynnwood	Pa.
Charuhas, James John	D.C.	Chew, Allen Frank	
Chase, Jay Valentine	D.C.	A.B. 1949, The George Washington	
B.S. 1939, United States Naval		University	Va.
Academy		Chewning, Wilda Jane	Md.
M.S. 1943, Massachusetts Institute		Chichester, Sidnor Tebba, Jr.	D.C.
of Technology		Chidsey, Thomas Campbell	D.C.
Chase, Marjory Ruth	D.C.	Chien, Bud Ming	Md.
Chase, Raymond Chandler, Jr.	N.H.	Child, Daniel Keigwin	Md.
B.S. 1940, University of New		Childe, Laurel	
Hampshire		B.S. 1945, University of Chicago	
Chase, Robert Thompson, Jr.	Pa.	A.M. 1946, Columbia University	Tex.
Chase, Russell Clifton	N.H.	Childers, H. Malcolm	Va.
Chase, Ruth Judith	Md.	Childs, James Thornton	D.C.
A.B. 1935, The George Washington		Chilari, Josephine Catherine	N.Y.
University		Chillemi, Richard Leo	D.C.
Chasey, Harry Lewis	Va.	Chin, Robert	
B.S. in Ed. 1934, Rutgers University		A.B. 1949, The George Washington	
Chasnoff, Bernard	Va.	University	Md.
B.S. 1939, M.S. in Ed. 1940, College		Chinn, Howard Ernel	Calif.
of the City of New York		Chinn, Ruby	Va.
Chason, Aubrey Thelmon, Jr.	Va.	Chipman, Marcia Ann	D.C.
Chassan, Jacob B.	D.C.	Chiringao, Persephone	Pa.
B.S. 1939, College of the City of		Chiselsky, Albert Edward	Miss.
New York		Chisholm, David Hugh	
A.M. 1949, The George Washington		B.B.A. 1947, A.B. 1949, University	
University		of Mississippi	

Students Registered

409

Chiam, Robert Loran	Md.	Chudzik, John Stephen	N.Y.
Chisolin, Hugh Eugene	D.C.	A.B. 1948, The George Washington University	
Chittenden, Joe Daniel, Jr.	D.C.	Chuu, Chu Man	Korea
A.B. 1949, The George Washington University		Church, Abiah Adelbert	Fla.
Chittenden, Thomas Ransom	Va.	A.B. 1948, The George Washington University	
A.B. 1941, University of Illinois		Church, Frederick Lewis, Jr.	Va.
Chleck, David Jack	N.Y.	B.S. in B.A. 1943, American University	
B.S. 1948, College of the City of New York		Church, Jane Otela	Va.
Choate, Mary Elizabeth	Okla.	A.B. 1948, University of South Carolina	
B.S. 1930, M.S. 1941, Oklahoma Agricultural and Mechanical College		Church, Lloyd Eugene	Md.
Chocola, Jack Robert	Pa.	A.B. 1941, West Virginia University	
B.S. 1948, West Virginia University		D.D.S. 1944, University of Maryland	
Chocola, Richard Adolph	Pa.	Church, Maury Curtis	Va.
Choisser, Roger Morrison, Jr.	D.C.	Churchill, Morton Vincent	D.C.
Chojnacki, Michael George	Pa.	A.B. 1941, The George Washington University	
Chorost, Helen	N.Y.	Chwastyk, Adolph Marcel	N.J.
Chorosey, John Marjan	D.C.	B.S. in E.E. 1949, Rutgers University	
Choulas, James George	N.Y.	Ciaquinto, Eugene Louis, Jr.	Conn.
LL.B. 1949, The George Washington University		Ciarrocca, Louis, Jr.	N.J.
Chow, Chuen	D.C.	Ciarrochi, Eli	Mass.
B.S. in M.E. 1937, Chiao-Tung University, China		Ciavarra, Vincent Alexander	N.J.
Chow, Dorothy Wei	D.C.	Cibley, Lawrence Jay	Mass.
Chow, Herbert Lo-Tien	D.C.	Cicala, Fred Frank	Md.
Chowning, Katherine Louise	Ind.	B.S. 1948, Wilson Teachers College	
Chramiec, Alexandra Wanda	Va.	Cifelli, Armand	N.J.
A.M. 1940, The George Washington University		Ciker, Fred	Md.
Christ, Christ C.	D.C.	Cilento, Bob Frank	N.J.
Christ, Lorene Ethel	Pa.	Cimokowski, Edwin William	Pa.
Christeller, Norman Lee	D.C.	Ciska, John Edward	Iowa
A.B. 1943, Oberlin College		Cisna, Frances Lathrop	Va.
Christensen, Clarence Peter	Md.	B.S. 1940, The George Washington University	
Christensen, Earl	Mont.	Cissel, John Patrick	D.C.
A.B. 1943, University of Montana		Citrenbaum, Bernard Francis	D.C.
Christensen, Warren Alfred	Md.	Civfiedra, Albert Joseph	D.C.
Christenson, Donald Edward	Nev.	Cizek, James Francis	Md.
Christian, Leonard D.	Okla.	Ciagett, Marshall Dement	D.C.
Christian, Oren Randolph	Calif.	Clancey, John Douglas	Ohio
M.S. 1948, United States Naval Postgraduate School		Clancey, John Thomas	Md.
Christian, Walter	N.J.	Clancy, Philip Christopher	N.Y.
Christian, Wayne Edward	Iowa	Clare, James Hager	Ohio
Christiansen, Birthe	Va.	Clark, Alfred James	Md.
Christiansen, Fred Kjargaard	Nebr.	Clark, Allen Culling	D.C.
B.S. 1937, Midland College		A.B. 1940, The George Washington University	
Christie, Edward Ashby	Mass.	Clark, Arthur James, Jr.	D.C.
Christoff, Michael George	Pa.	Clark, Belvia Elaine	Va.
Christofferson, Robert Edward	D.C.	A.B. 1946, The George Washington University	
Christoph, Kathryn Helen	D.C.	Clark, Boswell Johnson, Jr.	Va.
Christopher, Donald John	N.Y.	Clark, Buell H.	D.C.
Christopher, Eldon Washington	Va.	B.S. 1932, West Virginia University	
B.S. 1926, College of William and Mary		Clark, Charles Willard	Oreg.
Christopherson, Olaf Warren	Minn.	Clark, Donald Lewis	Va.
A.B. 1946, The George Washington University		Clark, Donald Roy	D.C.
Christov, Christo Vladov	D.C.	Clark, Edmund Berrigan	D.C.
Christovich, Charles George	Pa.	LL.B. 1949, Harvard University	
Christovich, Stanley Martin	Pa.	Clark, Edward Francis, Jr.	N.J.
Chronaker, George Steve	Md.	Clark, Ernest	Tenn.
Chrysakis, Joseph E.	D.C.	Clark, Ernest Chapman, Jr.	Va.
Chu, Euclid	N.Y.	Clark, Eugene Evans	Va.
Chu, Kwang Che	China	Clark, Frances Elizabeth	Va.
A.B. 1937, National Institute of Political Sciences, China		Clark, Francis Joseph	Va.
Chuck, Wong	Hawaii	Clark, George Henry, Jr.	D.C.
Chudzik, Adeline Celia	N.Y.	B.S. 1949, The George Washington University	
		Clark, George Ordway	Va.
		Clark, Gilbert Reed	D.C.
		Clark, Gwendolyn Jane	D.C.

Clark, Henry Caldwell, Jr.	N.J.	Cleary, Rita Agnes	D.C.
Clark, James Farrell	Md.	Cleary, Vincent Walter	Ill.
Clark, James Harry, Jr.	Va.	Cleaver, William Frank	D.C.
Clark, James Joseph	Fla.	Cleek, Given Wood	Va.
B.S. 1949, Georgetown University		Clegg, Eleanor Standish	D.C.
Clark, James Leonard	Ga.	Clemens, Charles Wesley, Jr.	Va.
Clark, Jane Ida	D.C.	Clement, Charles Bennett	D.C.
A.B. 1948, Cornell University		Clement, Mildred Davis	D.C.
Clark, Jocelyn	Fla.	A.B. 1938, New Jersey State Teachers College	
Clark, John Raymond	N.J.	Clements, Mary Will	Va.
A.B. 1941, Rutgers University		Clements, Walter Alexander	D.C.
LL.B. 1949, Harvard University		Clements, William Franklin	D.C.
Clark, John Robert, Jr.	Md.	Cleveland, Jesse Peter	Md.
Clark, Lowell Dean	Minn.	Cleveland, Stanley Russell	Va.
Clark, Lyman Ernest	Md.	Clewlow, Carl William	Va.
Clark, Malcolm Cameron	D.C.	A.B. 1949, The George Washington University	
Clark, Mardelle Lilly	Md.	Clewlow, John Clinton	D.C.
A.B. 1949, University of Georgia		Clexton, Edward William	Va.
Clark, Marianne Walton	D.C.	B.S. 1924, United States Naval Academy	
Clark, Maurice Harrison	Md.	M.S. 1929, Massachusetts Institute of Technology	
Clark, Maxine Willa	D.C.	Cliff, Ben A.	Md.
Clark, Patricia	Md.	Clifford, George Minott, Jr.	Maine
Clark, Raymond Dykes	D.C.	Clifford, Margery Pepperell	D.C.
B.S. 1948, University of California at Los Angeles		Clifford, Marvin Butler	Tenn.
Clark, Robert Cobb	Calif.	Clift, Robert Morris	Tex.
Clark, Roland Ellis	Md.	A.B. 1949, The George Washington University	
Clark, Ross Howard	Pa.	Clifton, Ernest Ridley	D.C.
Clark, Ruth Rosalind	Ill.	Clifton, James Newel	Va.
Clark, Sidney B.	N.Y.	Cline, Clyde Lucian	D.C.
A.B. 1947, The George Washington University		A.B. 1929, Bridgewater College	Va.
Clark, Victoria Chaapel	D.C.	Cline, June Antonia	
B.S. 1929, Columbia University		A.B. 1946, Roanoke College	Va.
Clark, William Bert	Ga.	Cline, Mildred Dean	
Clark, William Giddings	Md.	B.S. in Ed. 1944, Madison College	Md.
Clark, William Richard	Va.	Cline, Paul Francis	Mech.
Clarke, Addison	Md.	Clinkston, Philip	
Clarke, Dolores	D.C.	B.S. 1942, University of Michigan	
Clarke, Holden Mast	D.C.	M.S. 1944, The George Washington University	
Clarke, James Brent	Va.	Clinton, Wilma May	N.Y.
Clarke, John Harrison Oliver	Md.	Cloe, William Weedon, Jr.	Va.
B.M.E. 1943, LL.B. 1948, University of Virginia		A.B. 1949, College of William and Mary	
Clarke, Lewis Lynn	Va.	Clokey, Mitchell Chase	Md.
Clarke, Peter Ethelston	England	Clore, Nona	D.C.
A.M. 1948, Cambridge University		Close, David Olaf	N.J.
Clarke, Roy Slayton, Jr.	D.C.	Close, Franklin John	N.I.
A.B. 1949, Cornell University		Clois, Albert Morgan, Jr.	Iowa
Clarke, Ruby McNair	Va.	Clois, Jacqueline Wynwood	Va.
B.S. 1939, Winthrop College		Clois, William Fleming, Jr.	Va.
Clarke, Thomas M. Lyche	Va.	Cloutier, Rita Gertrude	D.C.
A.B. 1948, The George Washington University		Clois, Charles James	W.Va.
Clarke, Wilma Phyllis	N.Y.	A.B. 1947, Shepherd College	
Clarkson, Julia Ann	D.C.	Clyde, John Francis	Nebr.
Clary, Mary	Va.	Clymer, Joan Leach	Okla.
A.B. 1947, College of New Rochelle		B.S. 1942, University of Oklahoma	
Clatterbuck, Bryan C.	D.C.	Coakley, William Talmadge	D.C.
Claus, Gwendolyn Ruth	Mo.	A.B. 1948, University of Maryland	Md.
Clausen, Margaret Mary	D.C.	Coates, Augusta Maude	D.C.
Claussen, Peter Henry, Jr.	Nebr.	Coates, Catherine Lyla	Tex.
Clay, Harry Clifton	D.C.	Coates, Gladys Elizabeth	
Clay, Lucas Daniel, Jr.	Va.	B.B.A. 1944, University of Texas	Va.
Clay, Thomas Carolin	Ga.	Coates, Philip David	Wash.
Claybrook, Robert Allan	D.C.	Cobb, Leonard Cowgill	
B.B.A. 1949, Texas College of Arts and Industries		B.S. 1949, University of Washington	D.C.
Clayton, Christopher Sudlow	D.C.	Cobb, Sarah Juanita	Mont.
Clayton, Joseph Dolphin	Va.	Cobb, Thomas Lambert	
Clayton, Robert Edwin	Tex.	B.S. 1949, The George Washington University	
Cleary, Jeanne Audrey	D.C.		

Students Registered

411

Coberly, James Harold A.B. 1933, A.M. 1938, The George Washington University	W.Va.	Cohen, Albert Abraham	D.C.
Cobert, Arthur Thomas	Va.	Cohen, Bernard	D.C.
Cobert, George William	Va.	Cohen, Bernice Elizabeth	D.C.
Coburn, Harriette Howe	D.C.	Cohen, Betty Lee	D.C.
Coburn, William Hoffman	Mont.	Cohen, Donald Sidney	D.C.
Cochran, Corinne Haddad	Va.	B.S. 1947, University of Maryland	Md.
Cochran, Dean Farrington	Va.	Cohen, Earl	N.Y.
LL.B. 1949, The George Washington University		Cohen, Frieda	D.C.
Cochran, Donald McCoud	Pa.	Cohen, George Joel	D.C.
Cochran, Hewitt	D.C.	Cohen, Harvey Bernard	N.Y.
A.B. 1938, Yale University		Cohen, Herbert	
Cochran, Nancy Lou	D.C.	A.B. 1949, The George Washington University	N.Y.
Cochran, Robert Reid	N.J.	Cohen, Howard Martin	
B.S. in Ch.E. 1944, Tufts College		A.B. 1948, The George Washington University	
Cochran, Robert Thomas, Jr.	Va.	Cohen, Joel	Md.
B.S. in F.S. 1948, Georgetown University		Cohen, Marvin Bernstein	D.C.
Cochrane, Frederic	D.C.	Cohen, Melvin	D.C.
Cock, Thomas Charles	Calif.	Cohen, Melvin S.	N.Y.
Cockerville, Louis D.	Va.	A.B. 1938, Brooklyn College	
A.B. 1944, New York University		B.S. 1940, The George Washington University	
Cockfield, Benmie Tillman	D.C.	Cohen, Morris	D.C.
B.S. 1949, The Citadel		Cohen, Paul	N.Y.
Cockrell, Joy	Md.	A.B. 1932, College of the City of New York	
Cook, Mary Louise	Iowa	Cohen, Ralph Irwin	Ohio
Cook, Phyllis Kathryn	Va.	A.B. 1941, Washington and Lee University	
A.B. 1947, The George Washington University		Cohen, Richard Edward	D.C.
Cook, Joseph	N.J.	Cohen, Robert Henry	D.C.
Codd, Grace Bailey	D.C.	Cohen, Robert M.	D.C.
B.S. 1941, Mary Washington College		Cohen, Rosa Naomi	D.C.
Cody, Patrick John	Ind.	Cohen, Saul Benjamin	D.C.
Coe, Anne Hutton	Md.	A.B. 1940, The George Washington University	
Coe, Charles Frederick	Va.	Cohen, Sheldon Stanley	D.C.
B.S. 1923, United States Naval Academy		Cohn, Harold Joseph	Ohio
Coen, Benjamin Wiggins	W.Va.	A.B. 1911, Ohio State University	
A.B. 1949, Marietta College		Cohn, Leonard Earl	Md.
Coler, Justine Donnelly	Md.	Coil, Emory Alfred	Ohio
A.B. 1938, Syracuse University		Cokenias, Nicholas Trephon	D.C.
A.M. 1941, Smith College		A.B. 1941, A.M. 1948, The George Washington University	
Colley, Betty Maxine	D.C.	Coker, George Meadows, Jr.	D.C.
B.S. 1948, University of Maryland		Coker, Joseph Daniel	S.C.
Colley, Claude Ivo	D.C.	A.B. 1935, A.M. 1937, Ph.D. 1949, The George Washington University	
B.S. 1949, American University		Coker, Robert Harry	D.C.
Colley, Hubert Franklin	Tenn.	Colacicco, Frank	Md.
Colley, Richard Eugene	Va.	B.S. 1940, United States Military Academy	
Colley, Sarah Verna	Va.	Colangelo, James Michael	Va.
B.M. 1927, Texas State College for Women		Colberson, Reid Taylor	Va.
Coffin, Barrett Franklin	Va.	Colbert, Robert Chester	Pa.
Coffin, Charles Franklin	Utah	Colborn, Paul Appleby	D.C.
Coffin, James Clyde	Minn.	Colburn, Katherine Stewart	Va.
Colfman, Alice Anton	D.C.	Colby, Grace L. Wolfsohn	Wis.
Colfman, Clara Lillian	Va.	A.B. 1936, University of Wisconsin	
A.B. 1948, The George Washington University		A.M. 1937, University of Chicago	
Coffman, James Clark	Va.	Coldwell, John Marshall	Va.
A.B. 1943, West Virginia University		Cole, Andrew Truman	Va.
Cogan, Thomas James, Jr.	Mich.	Cole, Charles Alexander, Jr.	Ga.
A.B. 1947, Wayne University		Cole, Charles Fletcher	Conn.
A.M. 1949, Columbia University		B.S. 1938, Virginia Polytechnic Institute	
Coggeshall, Myrtle Edith	Ill.	Cole, Charles Herbert	D.C.
Coggins, John Wesley	Va.	Cole, Elizabeth Trucks	Va.
LL.B. 1940, The George Washington University		A.B. 1948, The George Washington University	
Cogswell, June Margaret	D.C.		
B.S. 1943, Wilson Teachers College	D.C.		
Cogswell, Raymond Louis	D.C.		
Cohan, Philip Cedric	D.C.		

Cole, Enser William, Jr. A.B. 1949, LL.B. 1942, University of North Carolina	N.C.	Collins, Henry Dalton B.S. 1940, Notre Dame University	Va.
Cole, Fenwick Earl	D.C.	Collins, James Francis	Pa.
Cole, George William B.S. 1949, Wilson Teachers College	D.C.	Collins, Joseph	D.C.
Cole, Harry Eugene A.B. 1947, Wittenberg College	Va.	Collins, Joseph John	Va.
Cole, Marjorie June	Kans.	Collins, Margaret Mary A.M. 1947, University of Maryland	N.Y.
Cole, Milton Burns	Md.	Collins, Michael Joseph	Va.
Cole, Pauline	D.C.	Collins, Morris Russell	D.C.
Cole, Ralph John A.B. 1948, The George Washington University	Pa.	Collins, Paul Thomas	D.C.
Cole, Robert Smith	N.M.	Collins, Samuel James	Pa.
Cole, Walter Harvey, Jr. B.C.E. 1949, The George Washington University	D.C.	Collins, Webster Horace	Md.
Coleman, Beverly Mosby B.S. 1942, United States Naval Academy	Va.	Collins, William Francis	Fla.
LL.B. 1948, The George Washington University	Va.	Collins, William Royston A.B. 1949, The George Washington University	N.Y.
Coleman, Carl Shaughnessy	Tex.	Collins, William Thomas	Va.
Coleman, Eddie Taylor, Jr.	Va.	Collins, William Timothy A.B. 1948, Catholic University of America	D.C.
Coleman, Florence Beatrice A.B. 1944, The George Washington University	D.C.	Collopy, Walter Francis Xavier A.B. 1947, Harvard University	D.C.
Coleman, George Melchides, Jr.	Va.	Colmen, Kenneth Seymour B.A.E. 1946, Georgia School of Technology	D.C.
Coleman, Harvey Ryan	Ga.	M.B.A. 1949, Cornell University	D.C.
Coleman, Joseph Lustrat	D.C.	Colmer, James Henry	Puerto Rico
Coleman, Juliet Cox A.B. 1947, University of Richmond A.M. 1949, The George Washington University	Tex.	Colin Gordian, José	Md.
Coleman, LaJoy	D.C.	Colot, Evangeline Wilson	D.C.
Coleman, Margaret Anne Baker	D.C.	Colquhoun, Marjorie Pauline	Ohio
Coleman, Mary Ellen B.S. 1937, Madison College	D.C.	Columbus, Eugene Gail	N.Y.
Coleman, Robert Francis	Va.	Colville, Robert Allen	La.
Coleman, Robert G., Jr.	D.C.	Colvin, Harold Bradford	D.C.
Coleman, Ruth Mary	N.Y.	Colvin, John Tower	Va.
Coleman, Sanford David	D.C.	Combelic, Donn	Va.
Coleman, Thomas Joseph	D.C.	Comfort, James A. B.S. 1947, Ithaca College	Va.
Coleman, Winifred Israel A.B. 1946, The George Washington University	D.C.	Conasarow, Paul B.S. 1944, University of Alabama	D.C.
Coleman, Prokopes	D.C.	Compart, Henry	Md.
Coleman, Merle Lee A.B. 1948, University of Colorado	Calif.	Compher, Paul Richard, Jr.	Va.
Coll, Robert Wilson	Fla.	Compton, John Richard	D.C.
Coll, Shirley Rae A.B. 1948, University of Florida	D.C.	Compton, Milton Edwin, Jr.	Va.
Collier, Donald B.S. 1942, Northwestern University	N.J.	Compton, Ross Harrington B.S. 1947, Massachusetts Institute of Technology	Va.
Collier, Edwin A.B. 1949, The George Washington University	Va.	Compton, Vera Louise	Va.
Collier, Jack Wayne	Va.	Comstock, Alice May A.B. 1944, Columbia University	Puerto Rico
Collier, Mabel Louise	D.C.	Comulada, Gloria Marie M.S. 1948, The George Washington University	Md.
Collier, Paul Rodney, Jr.	Wash.	Comulada, Manuel	Tex.
Collier, William Edward	Va.	Conant, Dee Roger	Va.
Collier, William Lee	Md.	Conant, Elizabeth J.	D.C.
Collier, William R. A.B. 1949, University of Pittsburgh	Va.	Conant, Eugene Lavern	Va.
Collings, Mary Louise A.B. 1945, Wesleyan College	Va.	Conant, Robert Charlton	Calif.
A.M. 1946, Northwestern University	Md.	Conard, Melvin Le Roy	N.Y.
Collins, Dwight Marshall A.B. 1930, Yale University	Md.	Conason, Emanuel Voltaire	Md.
Collins, Helen Monterey A.B. 1931, Florida State University A.M. 1949, University of Florida	Md.	Conaway, Charlotte Ann B.S. 1947, University of Maryland	Pa.
		Conboy, John Anthony B.S. 1948, University of Scranton	R.I.
		Concelia, Katherine E. B.	Pa.
		Coulters, Edwin Robert	Nebr.
		Condalaric, Richard Paul B.S. 1937, University of Kansas	D.C.
		Condon, Leo Christy	Md.
		Condon, Theron Elwin B.S. in M.E. 1934, Northeastern University	Va.
		Conger, Harriet Myers A.B. 1939, Smith College	

Congiundi, Nicholas Ronald	N.J.	Cook, Arthur Douglas	D.C.
A.B. 1949, University of Maryland		B.S. 1927, Georgetown University	
Conklin, Charles Robert	Va.	Cook, Carl Frederick	D.C.
Conklin, Robert Orland	Va.	Cook, Charles Leo	Va.
Conley, Betty	Ind.	Cook, Dorothy Butler	Md.
A.B. 1939, Indiana University		Cook, Edith Newman	D.C.
Conley, Kenneth Alvin	D.C.	A.B. 1929, Goucher College	
Conley, Mary Katherine	Va.	L.L.B. 1932, Columbia University	D.C.
Conlon, James Ambrose	N.Y.	Cook, Emily Adams	Ark.
Conlon, John Francis	D.C.	Cook, Frances Rowena	Va.
Conlon, Veronica M.	Ill.	Cook, Frederick Andrew	Vt.
Connaughton, John Hamilton	D.C.	Cook, Frederick Nelson	N.Y.
Connell, Charles Martin	Pa.	Cook, James Manning	
Connell, Eugene Ambrose, Jr.	Md.	Ed B. 1943, New York State Teachers	
Connell, John Gibbs, Jr.	Va.	College, Fredonia	D.C.
Connell, Edward Charles	D.C.	Cook, John Mason	Md.
Connely, Francis Becker	La.	Cook, John R.	
Conner, Charles Buford	Md.	B.S. 1946, University of Maryland	Md.
B.S. 1947, Washington and Lee		Cook, Marion Francis	D.C.
University		Cook, Mary Mercer	Calif.
Conner, John Paul	Pa.	Cook, Paul William	Pa.
Conner, Ray Bradford	D.C.	Cook, Rae Constance	
Conner, William Madison	Md.	B.S.C. 1949, Temple University	
Connerton, Joseph John	Pa.	Cook, Richard Charles	Va.
B.E. 1949, Catholic University of		Cook, Robert Carlsson	D.C.
America		Cook, William Gwynne	Va.
Connerton, Robert Joseph	Pa.	Cook, William Thomas	D.C.
B.S. in B.A. 1949, University of		Cooke, David Oliver	N.Y.
Scranton		B.S. 1944, Buffalo State Teachers	
Connolly, Barbara	D.C.	College, N.Y.	
Connolly, John Stoddard, Jr.	N.Y.	M.S. 1942, Albany State Teachers	
Connor, Audrey Marie	D.C.	College, N.Y.	
A.B. 1945, Trinity College		L.L.B. 1950, The George Washington	
Connor, James Parker	D.C.	University	
B.S. 1949, Georgetown University		Cooke, Edward Andrew	D.C.
Connor, James Robert	W.Va.	Cooke, Edward Andrew	D.C.
A.B. 1939, Fairmont State College		Cooke, Robert George	Va.
Connor, Joseph Daniel	D.C.	Cooke, Susan Newbold	Va.
Connor, Lawrence Day, Jr.	Va.	Cookson, Joseph William	D.C.
Connor, Louis Milton	Md.	Cookson, Raymond Theodore	Kans.
B.S. 1940, Maryland State Teachers		Cooley, Donald Gruver	Va.
College, Frostburg		A.B. 1949, Shepherd College	
M.S. in Ed. 1946, University of		Cooley, Edwin Henrick	Kans.
Maryland		A.B. 1934, Municipal University of	
Connor, Thomas Harvey	Md.	Wichita	
Conrad, James Calvin	Va.	Coolick, Alan Bronson	D.C.
Conrad, Paul Rawson	Kans.	Coon, Harold Edward	Md.
B.S. 1949, University of Kansas		Coop, Helene Bessie	D.C.
Conrad, Robert William	Md.	Cooper, Anna Marie	Pa.
Conrad, Shirley Myrtle	Kans.	Cooper, Burton Morris	D.C.
Conroy, Fanny	Peru	Cooper, Carlton Harvey	D.C.
Conroy, James Joseph	Va.	Cooper, Charles David	D.C.
Consolo, Salvatore Anthony	D.C.	A.B. 1948, The George Washington	
Constantinou, Constantine	Greece	University	
A.B. 1949, Columbia University		Cooper, Daniel	D.C.
Conte, Joseph Phillip, Jr.	N.Y.	Cooper, Eileen Cleary	Va.
Conti, Kathryn Chase	D.C.	A.B. 1931, College of New Rochelle	
Conti, Reno Joseph	D.C.	Cooper, George Huners	N.Y.
B.S. in Ed. 1948, University of		Cooper, Grace M.	Mich.
Vermont		A.B. 1947, The George Washington	
Continetti, Frank Edward	N.Y.	University	
Contos, William Harry	D.C.	Cooper, Joseph Emerson	Ind.
Conver, Charles Maxmillian	D.C.	A.B. 1938, Indiana University	
A.B. 1949, Swarthmore College		Cooper, Leonard Fredrick	N.J.
Convisser, Israel	D.C.	Cooper, Leonie Erskine	D.C.
L.L.B. 1928, Brooklyn Law School		Cooper, Lois M.	D.C.
Conway, Emmett Gaddis, Jr.	Va.	Cooper, Mary Evelyn	Va.
Conway, James Wentworth	D.C.	Cooper, Mattie Augusta	Va.
Conzelman, Gaylord Maurice	Calif.	A.B. 1927, Mississippi State College	
B.S. 1949, Idaho State College		for Women	
Coogan, James Francis	D.C.	Cooper, Paul Allen	D.C.
Coogan, John Patrick	D.C.		

Cooper, Paul David	Md.	Corso, Victor	D.C.
B.S. 1939, Western Maryland College		A.B. 1941, Queens College	
M.Ed. 1942, University of Maryland		Corson, Elizabeth Wallace	N.J.
Cooper, Ruth Z.	D.C.	Corte, Joseph Philip, Jr.	N.Y.
B.S. in Ed. 1941, College of the City		Cortez, Ezekiel Casimiro, Jr.	N.M.
of New York		A.B. 1943, New Mexico College of	
Cooper, Shelby	Pa.	Agriculture and Mechanic Arts	
Cooper, Suzanne Taylor	D.C.	LL.B. 1948, The George Washington	
Cooper, Thomas Ernest	N.Y.	University	
Cooper, Thomas Schane	D.C.	Corvin, Alice Elizabeth	D.C.
Cooper, Wesley William	Va.	Corwin, Leonard Joel	N.J.
LL.B. 1947, The George Washington		B.S. 1947, Rutgers University	Md.
University		Cosgrove, Thomas Edward	D.C.
Coover, Mullen Oble	W.Va.	Cosman, Alvin	D.C.
A.B. 1942, Shepherd College		Cossio, Manuel Fernando	D.C.
M.S. 1946, West Virginia University		Costa, Jasper Silva	D.C.
Cope, Harland Burleigh	Kans.	A.B. 1927, Brown University	
A.B. 1940, University of Kansas		LL.B. 1941, Cornell University	
Copeland, Lynn Preston	D.C.	LL.M. 1948, Georgetown University	Va.
A.B. 1943, Hunter College		Costa, Louise Carrel	
Copeland, William Long	Pa.	A.B. 1942, Judson College	N.Y.
Copes van Hasselt, Roelof Hendrik	Canada	Costanzo, Sue	Puerto Rico
Coppel, Arthur	N.Y.	Costas, Raul, Jr.	
A.B. 1940, University of Virginia		B.S. 1947, Villanova College	D.C.
Copperman, Howard Robert	Pa.	Costello, Helen Delores	Maine
Copey, Jesse Fabrian	Va.	Costello, Bartley Alexander	W.Va.
Corbets, Eugene Paul	Ohio	Costello, Elmer Price	
A.B. 1949, Mount Union College		A.B. 1942, Marshall College	D.C.
Corbin, James Gerard	D.C.	Costello, Eugene Aloysius	Calif.
Corbin, James Rupert	Va.	Costello, Joseph Daniel	
Corcoran, Sarah Rose	D.C.	B.S. 1947, United States Naval	
A.B. 1920, Vassar College		Academy	D.C.
A.M. 1936, Columbia University		Costello, Marilyn Louise	Calif.
Cordell, Frank Paul	Md.	Costello, Richard Edward	
Cordelli, Peter Paul	Pa.	LL.B. 1934, University of California	
Cordier, Lucille D.	Nebr.	LL.M. 1948, The George Washington	
Cordes, Elizabeth Marie	D.C.	University	Va.
Cordova, Ralph	N.Y.	Costello, Thomas Joseph	Cuba
Corey, W. Robert	D.C.	Costo, Raul Jose	Va.
A.B. 1948, Syracuse University		Cote, Daniel Narciso	D.C.
Corkery, Dorothy Katherine	Va.	Cotham, Robert Bruce	Va.
Corkburn, William Russell	Mass.	Cotten, Rebecca Ann	Md.
A.B. 1949, Syracuse University		Cotter, Francis Aloysius	
Corkran, Shirley Stoddard	D.C.	LL.B. 1949, The George Washington	
A.B. 1945, A.M. 1946, Carleton		University	Mass.
College		Cotter, John	
Corkum, Anna Elizabeth	Mass.	A.B. 1924, Yale University	Ill.
Corn, Palmer Boyd	Ky.	Cotton, Martha	D.C.
B.S. 1939, Murray State Teachers		Cottrell, Walter Nevins	D.C.
College, Ky.		Cottrill, James Albert	Tenn.
Cornelius, Minam Keeler	D.C.	Couch, Howard William	Pa.
A.B. 1920, Mount Holyoke College		Coughlin, Richard James	
A.M. 1926, Radcliffe College		B.S. 1941, New York State Teachers	
Cornell, Geraldine	N.Y.	College, Buffalo	D.C.
B.S. 1941, Catholic University of		Coulombe, Raymond Armond	
America		B.M.E. 1948, The George Washington	
Cornell, Lucy Paul	Md.	University	N.H.
A.B. 1949, The George Washington		Coult, May	
University		A.B. 1947, The George Washington	
Cornish, LeRoy William	D.C.	University	Mich.
Cornwell, Martha Daniel	D.C.	Coulter, Patricia Florence	
Cornwell, Murray Paul	Va.	A.B. 1945, University of Michigan	D.C.
Cornwell, Richard Edwin	Va.	Coultrip, Raymond Laverne, Jr.	Ill.
A.B. 1946, Hampden-Sydney College		Counsell, James Anthony	N.Y.
Corrado, Michael Anthony	D.C.	Coupar, Elizabeth Mary	
A.B. 1949, The George Washington		B.S. 1939, Madison College	D.C.
University		Couper, William Paul	D.C.
Corrado, Rosalie Celeste	D.C.	Couperthwaite, Charles	D.C.
A.B. 1947, American University		Courie, Wadie Alexander	
Corridon, John Raymond	Md.	B.S. 1948, Georgetown University	D.C.
A.B. 1910, University of Maryland		Courtis, Constantine	D.C.
LL.B. 1942, The George Washington		Courtney, Gilbert Rodda	D.C.
University		Courtney, Jack Lanier	

Courtney, Robert Lawrence	Va.	Craighill, Mary Nute	Mass.
Courtright, Ann	Md.	Crain, Francis Drummond	D.C.
Cousins, Helen Loretta	D.C.	Crain, Ralph Rendell	Va.
Covello, Vincent Anthony	N.Y.	Cram, Charles Daniel	Mass.
Cover, Richard Gordon	D.C.	B.S. 1949, Georgetown University	
Cover, Katherine Elizabeth	D.C.	Cramer, Patricia Ann	D.C.
A.B. 1947, Wake Forest College		B.S. 1949, Wilson Teachers College	
Coviello, Marcel Anthony	D.C.	Crammond, James Darwin	D.C.
Covington, Christine Vianna	Miss.	Crampler, Roland	D.C.
Cowan, Robert Charles	D.C.	Crandell, William Palmer	Md.
Coward, James Smith	Tenn.	Crane, Elizabeth Weems	Md.
Coward, Daniel Couch	Tex.	B.S. 1940, Towson Teachers College,	
Cowell, Charles Ellwood, Jr.	Pa.	Md.	
A.B. 1949, The George Washington		Crane, Eather Sibyl	N.M.
University		A.B. 1949, The George Washington	
Cowie, Franklin Garrett, Jr.	Va.	University	
Cowie, Margaret Helen	Ohio	Crane, James Fifield	D.C.
Cowles, Frank Lyle, Jr.	Va.	B.S. 1944, Harvard University	
Cowles, Truman David, Jr.	Conn.	A.M. 1948, University of California	
B.S. 1944, Franklin and Marshall		Cranford, John Rinker	Va.
College		Cranford, Lucille L.	Md.
LL.B. 1949, Catholic University of		Crank, Kenneth Earl	D.C.
America		Crank, Terrell Harvey	Va.
Cook, James Edward	D.C.	Crankshaw, Harold George	D.C.
Cox, Alfred Alexander	Ark.	B.S. 1928, Carnegie Institute of	
B.S.E. 1948, Arkansas State Teachers		Technology	
College		A.M. 1932, Cornell University	
Cox, Chester Elwood, Jr.	D.C.	Crapster, Louis R.	Md.
Cox, Daniel Alpha	D.C.	Crasa, Anthony Rocco	Conn.
Cox, Donald Gilmer	D.C.	Crasas, William Constantine	D.C.
Cox, George Joseph	Pa.	Cratty, Thomas Dodds	Pa.
Cox, Herman Elmer	S.C.	Crawford, Audrey Lorraine	D.C.
Cox, L. Verne A.	Nebr.	Crawford, Faith Flora	S.C.
Cox, Omer Loraine	Ill.	B.S. 1948, University of South	
Cox, Sidney	Maine	Carolina	
A.B. 1948, The George Washington		Crawford, George Robert	D.C.
University		Crawford, Howard Irvin	Iowa
Cot, Tudie L.	La.	Crawford, Jennie Irene	D.C.
A.B. 1947, The George Washington		Crawley, Roy Wallace	D.C.
University		A.B. 1948, University of California	
Cox, William Davis	Ala.	at Los Angeles	
Cox, William L., Jr.	Va.	Creamer, Charles Robert, Jr.	Va.
Coyle, Kathryn Rosamond	R.I.	A.B. 1950, Shepherd College	
A.B. 1945, Emmanuel College		Creamer, Francis Joseph	D.C.
B.E.D. 1946, Rhode Island College of		Creamer, Joseph Patrick	D.C.
Education		Creamer, Paul James	D.C.
Coyne, Joseph Patrick	D.C.	Credle, Joseph Swindell	Md.
A.B. 1949, St. Ambrose College		Creedon, Agnes Cecelia	D.C.
Coyner, Owen Faber	Md.	Creekmore, Janie Geraldine	Miss.
Cozan, Lee William	Md.	Creekmore, Russell Whitfield, Jr.	Va.
A.B. 1948, American University		Creesy, William Martin	Md.
Cozmyk, John	W.Va.	A.B. 1949, Duke University	
Cozzi, Aldo John	N.Y.	Creger, Hugh Cassell, Jr.	Va.
B.S. 1946, M.E. 1947, Stevens		LL.B. 1950, The George Washington	
Institute of Technology		University	
Craddock, William Wood	Md.	Creschton, William James	Mass.
Craft, Alvis Mahlon	D.C.	Cremata, Robert Williamson	Md.
Craft, Robert Harold	D.C.	Creson, David Boone	D.C.
Craft, Robert Wayne	D.C.	Cresthill, Esther	N.J.
Crafton, Dorothy Warren	Va.	Cresswell, Richard Nicholas	D.C.
Craoee, John Henry	D.C.	Creviere, Cyrus Robinson	D.C.
Craig, Camille Jacob	D.C.	Creise, William Peter	Md.
B.S. 1942, The George Washington		Crews, Norma Jean	D.C.
University		Crickson, Charles Franklin	D.C.
Craig, Cecile Elizabeth	D.C.	Crickenberger, Ira Jethro	Va.
A.B. 1947, Clark University		Crickenberger, John Lee	Md.
Craig, Owen Richardson	D.C.	A.B. 1948, American University	
B.S. in Eng. 1948, The George Wash-		Crider, James John	D.C.
ington University		Crim, Catherine Isabelle	Va.
Craig, George Arthur	Va.	Crim, Margaret Ann	Ind.
Craig, Neil	Md.	B.S. 1947, Wilson Teachers College	
Craig, Willa Maxine	Tenn.	Crisp, John Kibler, Jr.	Ga.
Craig, William Franklin	Va.	Criss, Emma Hamrick	W.Va.

Crisinger, Don David	Ohio	Cudlipp, Irene M.	Md.
Criswell, Howard Donald	D.C.	B.S. 1936, Johns Hopkins University	
Critchfield, Burke McClure	Va.	A.M. 1935, Columbia University	Va.
Croasdiell, Cameron Walter	Fla.	Culbertson, Reid Taylor	S.C.
Crossmun, Homer Oliver	Va.	Culbertson, Mary Florence	
Crofton, Ann Marie	Mass.	A.B. 1937, University of South Carolina	
Crogan, John Charles	Va.	Culhane, Robert William	N.Y.
Crombie, Eleanor Louise Brown	Va.	Cullen, Darla Lee	Va.
Crone, John Felix	Tex.	Cullen, Frank	D.C.
A.B. 1937, University of Texas		Cullen, Frank Haywood	Va.
Cronin, Edmund Bertram	Md.	B.S. in Eng. 1949, The George Washington University	
Cronin, G. S. Homer	Mass.	Cullen, John William	Va.
Ph B. 1937, Holy Cross College	N.Y.	A.B. 1949, University of California at Los Angeles	
Cronin, James Joseph	Md.	Cullen, Joseph Daniel	D.C.
Cronk, Duane Louis	Minn.	Cullen, Margaret Mary	Fla.
Cronk, Edwin Monroe		Cullen, Marie Agnes	N.H.
A.B. 1941, Cornell University	Mass.	Cullen, Matthew Joseph, Jr.	Mass.
Crook, Frank Whittaker	D.C.	A.B. 1946, Harvard University	
Crooker, Barbara Travis		Culler, Paul Joseph	Ohio
A.B. 1944, Carleton College	Mass.	Culp, Theodore Francis	D.C.
Crooks, Robert Gladden		Culpepper, Robert Everett	N.Y.
B.S. 1949, M.S. 1949, Massachusetts Institute of Technology	Va.	A.B. 1948, The Citadel	Pa.
A.B. 1947, University of Virginia		Culver, William Bruce	D.C.
Crosby, Herbert Lee	Iowa	Cumberland, Walter Lewis	D.C.
Crosby, John Raymond	D.C.	Cummer, John Robert	Iowa
Crosby, Wallace Dodds	Va.	Cummings, Diane May	D.C.
Cross, Calvin George	Mass.	Cummings, Eileen Jane	
Cross, Dan Norman	Iowa	A.B. 1949, The George Washington University	
Cross, George Franklin, Jr.	D.C.	Cummings, Frank	Va.
Cross, George Joseph	D.C.	Cummings, George Patrick, Jr.	D.C.
Cross, Theodore Sherman	Calif.	Cummings, Jack	Oreg.
Crossfield, Louree Tommy	Okla.	Cummings, Lilla Burt	D.C.
A.B. 1934, Central State College, Okla.		A.B. 1949, The George Washington University	
Crosswell, Harry Bennett	D.C.	Cummings, Martin William	Conn.
Crouch, Hassell Wilkinson	N.Y.	Cummings, Robert Emmet	Me.
Crouch, Robert Brighton	Idaho	Cummings, Samuel	D.C.
B.S. in C.E. 1949, University of Idaho		A.B. 1949, The George Washington University	
Crowder, Herbert Randolph	Va.	Cummins, William Edwin	D.C.
Crowe, Vincent James	D.C.	M.S. 1948, Webb Institute of Naval Architecture	
Crowell, Jack	Md.	Cummins, Beaulda Edmee	D.C.
A.B. 1947, The George Washington University		Cuniberti, John Stow	Md.
Crowell, William Robert	D.C.	B.S.E. 1949, Princeton University	
Crowley, James Joseph	Mass.	Cunningham, Carolyn Marydlaire	D.C.
Crowley, James Worthington	Tenn.	Cunningham, Catherine Beatrice	Okla.
Crowley, John William	D.C.	Cunningham, Dewey Junior	Va.
A.B. 1939, College of the City of New York		B.M.E. 1947, University of Louisville	
Crowley, Thomas Michael	N.Y.	Cunningham, Edith Virginia	
Crowther, Dean Kay	Va.	A.B. 1947, The George Washington University	
Crozier, Eleanor Elizabeth	D.C.	Cunningham, Grace Faupel	Md.
Cruden, Joseph C.	D.C.	A.B. 1948, Goucher College	Pa.
B.S. 1942, Georgetown University	Fla.	Cunningham, John Edward	Va.
Cruiger, Flossie Genevieve	Va.	Cunningham, Mary Jane Catherine	Mass.
Crum, Frances May		Cunningham, Raymond Joseph	Va.
A.B. 1940, Morehead State Teachers College, Ky.		Cunningham, Robert Kuhlman	
Crumley, Howard Lee	Va.	A.B. 1949, University of Michigan	N.Y.
Crummett, Harvey Bernard	W.Va.	Curley, Helen Carolyn	N.J.
Crummett, John David	D.C.	Curley, John Lawrence	Va.
Crumpp, George Aubrey	Va.	Curley, Michael Joseph	Ala.
Crumpler, Roland	N.C.	Curley, William Henry	Va.
Crupain, Eli N.	N.Y.	Currie, Hubert Paul	D.C.
A.B. 1940, Brooklyn College		Currier, Wade Richardson	Va.
Crupper, Joseph Lee III	Md.	Curran, John Langford	
Crye, Dolores Lylo	Wis.	A.B. 1949, The George Washington University	D.C.
Cryer, John Barrett	D.C.	Curry, Barbara Ann	
Cudd, George B.	S.C.		
Cuddy, William Thomas	D.C.		

Curry, Bryce Quentin	Ala.	Dalonas, John	Va.
Curry, John Vincent	N.Y.	Daleymp, James McIver	Va.
Curry, Loretta Jane	S.D.	Dalton, Charles Edward	Va.
Curry, Mary Catherine	D.C.	Dalton, Duonne	Va.
B.S. 1942, New York State Teachers College, Albany		Dalton, Eileen Elizabeth	D.C.
Curry, Michael Paul	D.C.	Dalton, Elizabeth Victoria	Va.
Curry, Rosemary	Pa.	B.S. in Ed. 1942, Madison College	
Curry, Stowers Leigh, Jr.	Va.	Dalton, Martin Frank	N.J.
A.B. 1948, The George Washington University		Dalton, Patricia Gade	Md.
Curtin, Edmund Bernard	D.C.	Dalton, Ren Elizabeth	Va.
Curtin, John Tracy	D.C.	Dalton, Stanley Charles, Jr.	Md.
Curtin, Richard Maurice, Jr.	D.C.	B.S. 1947, Rensselaer Polytechnic Institute	
Curtis, Allen Benjamin	Ohio	Dalton, Thomas James	Va.
B.Ch.E. 1943, Fenn College		A.B. 1949, The George Washington University	
Curtis, John Robert, Jr.	Tex.	Daly, Eleanor Adelaide	Mass.
Curtis, Kenneth Edward	D.C.	A.B. 1944, Pembroke College	
Curtis, Mattie McCain	Va.	Daly, Elizabeth Teresa	Va.
Curtis, Nell M.	D.C.	Daly, Janet Audrey	Va.
Curtis, Norma Lorraine	Md.	Daly, John Joseph	Va.
A.B. 1949, University of Maryland		A.B. 1949, The George Washington University	
Curtis, Robert Edward	Md.	Daly, Philip Niland	Md.
Curtiss, Jeanne Marie	Md.	Daly, Robert Joseph	D.C.
Cushing, Thomas William	Md.	Damatta, Maria Helena	Portugal
B.S. in E.E. 1940, University of New Hampshire		Dambroski, Stanley George	Pa.
Cushman, Robert Everton, Jr.	Minn.	Damelin, Jack	D.C.
B.S. 1935, United States Naval Academy		B.S. 1942, University of California	
Custard, Robert Franklin	Va.	Dameron, Carlton Sherwood, Jr.	D.C.
Custer, Edward Scheid	Del.	D'Amico, Albert John	D.C.
Cutler, Mary Wilson	Md.	B.S. 1948, American University	
Cutright, Carl Richard	Va.	D'Amico, Lewis Joseph	Ohio
Cutshall, Gail Marie	Pa.	Damon, Horace Burns, Jr.	Maine
Cutting, Maebelle Frances	D.C.	Damren, Frances Shesler	D.C.
Cutitta, Frank	D.C.	Damron, Charlotte Missouri	Ohio
B.S. 1937, Brooklyn College		A.B. 1940, Wellesley College	
Cwajchel, Leon	Israel	M.S. 1942, Rutgers University	
Cyr, Robert Joseph	Mass.	Danaher, Thomas Patrick	N.Y.
A.B. 1949, American International College		D'Andrea, Angela Rose	Ill.
		A.B. 1944, Blochorn University	
		Dane, Genevieve O'Leary	D.C.
		Dane, Michael Nicholas	Pa.
		Danforth, Murray Snell, Jr.	R.I.
		A.B. 1948, Yale University	
		Danforth, Robert Compton	Va.
		Daniel, Alice Mae	D.C.
		Daniel, Bernard H.	D.C.
		A.B. 1931, Ouachita College	
		Daniel, Betty Faythe	Ga.
		Daniel, Carlyle Camden	D.C.
		Daniel, Jean Ellen	Va.
		Daniel, Neil	D.C.
		Daniel, Robert Herman	Va.
		Daniel, William Jeffress	N.C.
		B.Ch.E. 1947, North Carolina State College	
		Danielak, Paul Arthur	Mich.
		Daniels, Almon Edward	Va.
		B.S. 1937, University of Florida	
		Daniels, Howard Kenneth	W.Va.
		Daniels, Margaret E.	D.C.
		Daniels, Mary Catherine	Md.
		Daniels, Miles Dewey	Pa.
		Daniels, Richard Gauntlett	Md.
		Daniels, Thomas John	Pa.
		Daniels, Walter Melvin	Md.
		Danilowicz, Henry Julius	D.C.
		Danilowicz, Pascal Joseph	Md.
		B.S. in C.E. 1948, Wilkes College	
		Danko, John James	Minn.
		Dannelly, Frank Perry	Ala.
		A.B. 1943, University of Alabama	

Danser, William James	N.Y.	Davis, Carl Clegg	Okl.
D'Antimo, Daniel	N.Y.	B.S. 1943, Oklahoma Agricultural and Mechanical College	
B.S. 1948, University of Buffalo		LL.B. 1949, University of Oklahoma	Kans.
Danzig, Ada Beverly	D.C.	Davis, Carmen Marcelle	Tenn.
Danzig, Solomon Albert	D.C.	Davis, Charles Russell	
Dapozza, Guillermo D.	Philippines	Davis, Clifford, Jr.	
D'Arcezo, Louis Robert	R.I.	A.B. 1949, The George Washington University	D.C.
Dargan, Marion, Jr.	N.M.	Davis, Dale Miller	
D'Arenzo, Tony	N.Y.	A.B. 1948, The George Washington University	Ohio
Darlin, Lewis R., Jr.	D.C.	Davis, David Stanley	D.C.
Darmstadter, Joel	D.C.	Davis, Dora Alice	Tenn.
A.B. 1940, The George Washington University		Davis, Edith Mary	
Darr, Betty Jane	Va.	A.B. 1937, King College	D.C.
Darr, Harry Frazee	Mich.	Davis, Edna Caroline	
B.S. 1942, Wilson Teachers College		A.B. 1937, The George Washington University	
Darragh, Roberta Leechman	D.C.	A.M. 1942, American University	Va.
Darrenhursch, Albert	Pa.	Davis, Edward French	
B.S. 1947, Temple University		B.S. in Eng. 1935, The George Washington University	D.C.
Darrock, John Donald	Va.	M.S. 1941, University of Maryland	
A.B. 1947, A.M. 1949, University of Michigan	Mich.	Davis, Elsie Marie	
Darrock, Virginia Therese	Va.	B.S. 1941, New Haven State Teachers College	
Darsch, Earl Clement		A.M. 1949, The George Washington University	N.J.
A.B. 1941, Western Maryland College	La.	Davis, Elton D.	Md.
Dart, Albert Laplace		Davis, Esther Packman	
A.B. 1934, LL.B. 1937, Tulane University	Va.	B.S. 1934, University of Pennsylvania	Va.
Daskam, Harry Mortimer	La.	Davis, Evelyn Smalling	
Degout, Lawrence Randall		A.B. 1940, The George Washington University	Md.
M.S. 1937, University of California	D.C.	Davis, Ewin Paul	
Darrow, Donald Wilham	N.Y.	A.B. 1949, Washington College	Vi.
Daube, Robert Walter	Ky.	Davis, Florence Lola	
Dauer, John Walter	D.C.	B.S. in H.E. 1944, University of Vermont	D.C.
Daugherty, Floyd Norton, Jr.	Ind.	Davis, George, Jr.	Md.
Daugherty, Mary Barbara	Va.	Davis, Grace Ann	D.C.
Daußman, Grover Frederick	D.C.	Davis, Grace Anne	Md.
Daut, William Laurence, Jr.	S.C.	Davis, Harry Edward	La.
Davenport, Billy Allen	Ohio	Davis, Helen Cloney	Va.
Davenport, Catherine Shannon	Va.	Davis, Herbert Lowell	Va.
Davenport, John Hobson		Davis, Hilda Jean	Ohio
A.B. 1949, The George Washington University	Va.	Davis, James Cox III	D.C.
Davenport, Milton Monroe		Davis, James Elijah	Va.
Davenport, Rosemary Jean	Va.	Davis, James Vincent, Jr.	
A.B. 1949, College of New Rochelle		B.S. 1949, The George Washington University	Md.
Davich, Michael	Pa.	Davis, Jeanne Marie	Calif.
B.S. in E.E. 1948, University of Pittsburgh		Davis, John Alexander, Jr.	
David, George E.	Md.	A.B. 1921, Marshall College	
David, Maurice Allen	Ind.	A.M. 1927, University of Michigan	
Davidson, Chester Peter	N.Y.	B.S. 1948, M.S. in Ed. 1949, Ohio University	Va.
Davidson, Dale Russel	Colo.	Davis, John Eisele, Jr.	D.C.
Davidson, Edgar Moore, Jr.	Va.	A.B. 1949, University of Maryland	
Davidson, Frank Joseph	N.Y.	Davis, John Raymond	Mass.
Davidson, Herbert Donald	D.C.	Davis, John Wentworth	Va.
Davidson, James Frederic	Kans.	Davis, Joseph Howe	D.C.
A.B. 1945, Yale University		Davis, Kenneth Lee	D.C.
Davidson, May	N.C.	Davis, Lawrence Richard	Md.
B.S. 1940, University of North Carolina		Davis, Leroy Charles	Ala.
Davidson, Roy Aaron	D.C.	Davis, Louis Reid	
Davies, Edith Maurice	D.C.	A.B. 1942, Birmingham-Southern College	Conn.
Davies, John Rhys	D.C.	Davis, Martin Thomas	
A.B. 1946, University of North Carolina		B.S. 1948, Rensselaer Polytechnic Institute	
Davis, Akin Thornwall	D.C.		
Davis, Andrew Nathan	D.C.		
Davis, Archie Enright	Md.		
B.S. 1949, Georgetown University			
Davis, Bobby Copeland	Tenn.		

Davis, Mary	D.C.	Day, John Sanford	Va.
Davis, Mary Jane	D.C.	B.S. 1925, United States Naval Academy	
Davis, Paul Lee	D.C.	Day, Louise Duvall	Va.
B.S. 1947, M.S. 1948, The George Washington University		Day, Helen Jane	D.C.
Davis, Phyllis Joan	Pa.	B.S. 1944, Wilson Teachers College	Calif.
Davis, Raymond Arthur	Ohio	Dea, Franklin	
A.B. 1949, The George Washington University		A.B. 1948, University of Maryland	D.C.
Davis, Richard Frantz	Va.	Deadwyler, Carl Morris	D.C.
Davis, Richard Milton	Md.	DeAppo, Richard Parker	N.C.
Davis, Richard Nathan	Va.	Deal, Laurie Joe	
Davis, Robert Hall	D.C.	B.S. 1944, Lenoir-Rhyne College	Va.
Davis, Robert Herbert	Conn.	Deam, Keven Andia	Md.
A.B. 1946, M.S. 1949, Indiana University		Deam, William Paul	D.C.
Davis, Robert Hugh	D.C.	Dean, Benjamin Franklin	Ga.
Davis, Robert Lee	D.C.	Dean, Betty	Kans.
Davis, Robert Meness, Jr.	Calif.	Dean, Betty Pearl	N.C.
A.B. 1948, The George Washington University		Dean, Carl Lee	Md.
Davis, Robert Walker	D.C.	Dean, Frank Atwood	
Davis, Roderick Clinton	D.C.	B.Ch.E. 1941, University of Toledo	Tenn.
Davis, Sadye Jane	Pa.	Dean, Frank B.	Mich.
A.B. 1947, The George Washington University		Dean, George Ross	Va.
Davis, Sidney Robert	Calif.	Dean, Gertrude Mary	D.C.
Davis, Thomas Frederick	Va.	Dean, Louise Blakeslee	
B.S. in Ed. 1935, Bloomsburg State Teachers College, Pa.		A.B. 1919, Wellesley College	D.C.
Davis, Thomas McLellan, Jr.	D.C.	Dean, Mary Kendrick	Va.
A.B. 1948, The George Washington University		Dean, Mills III	Mo.
Davis, Thomas Walker	D.C.	Dean, Robert Murry	Conn.
Davis, Thomas Walker III	Tenn.	Dean, Thompson	
A.B. 1945, Vanderbilt University		A.B. 1916, Harvard University	Va.
B.S. 1949, United States Military Academy		Dean, Willis Calvin	D.C.
Davis, Virginia Lee	Mass.	deAndrade, Gentil Leite	N.Y.
B.S. in Ed. 1938, Boston Teachers College		DeAngelis, Louis Benjamin	Va.
Davis, Vivian Elizabeth	Mich.	DeAngelis, Quincy Carl	N.C.
Davis, Winston McSmart	Va.	Dear, Frances Brook	Ohio
B.S. 1947, Georgetown University		Deasy, John Paul	
Davison, Mark Leonard	D.C.	A.B. 1948, The George Washington University	Pa.
Davison, Martin Louis	D.C.	DeBarr, John Richard	
B.S. 1950, The George Washington University		A.B. 1947, Bowdoin University	Ohio
Davison, Robert McCloud	D.C.	DeBlasis, Samuel Joseph	R.I.
Davitt, Edward Patrick	Va.	DeBlasis, Jean Paul	Mich.
Dawkins, John Tyler	D.C.	DeBunn, Wesley	
Dawn, Carroll William	D.C.	B.S. in E.E. 1946, Illinois Institute of Technology	D.C.
Dawson, James Alfred	Va.	DeBurr, Mary Margaret	
Dawson, Myldred Gupton	D.C.	A.B. 1947, The George Washington University	Mich.
A.B. 1940, Eastern Carolina Teachers College, N.C.		Dec, Lawrence Louis	Del.
Dawson, Robert Martin	D.C.	DeCamara, Richard Paul	
B.Mus. 1939, Catholic University of America		A.B. 1940, The George Washington University	D.C.
Dawson, Shelton Phelps	D.C.	DeCaro, Beatrice Wehrenberg	D.C.
Day, Calvin Woodward	Conn.	DeCesare, Rita Lucille	N.Y.
Day, Clayton Lavern	D.C.	Decher, John Erich	
B.S. 1923, C.E. 1929, Iowa State College of Agriculture and Mechanic Arts		B.S. 1946, Lehigh University	D.C.
J.D. 1950, Drake University		Dechter, Gerald Yale	D.C.
Day, DeVere Lester	Va.	Deck, Charles Ormond	D.C.
B.S. 1925, United States Naval Academy		Deck, William Meads	D.C.
Day, Ernest Herbert	Ohio	Deckelbaum, Stanley	Md.
A.B. 1941, Oberlin College		Decker, Charles Seymour, Jr.	D.C.
Day, Howard MacDonald	D.C.	Decker, Charlotte Burch	
		B.S. 1939, Wilson Teachers College	W.Va.
		Decker, George Elwood	N.Y.
		Decker, Louis	Oreg.
		Deering, Harold John	D.C.
		Dees, Lola Tidwell	D.C.
		Deeter, William Taylor	
		A.B. 1945, The George Washington University	Tex.
		Deets, Clifford	N.Y.
		DeFeis, Peter Pat	

Defenderfer, Arthur William, Jr. B.S. 1938, Lehigh University	D.C.	de Luna, Frederick Adolph Del Vecchio, Claire Lee	Md. D.C.
Defreitas, Edward Neville A.B. 1946, The George Washington University	Va.	Demaree, Kenneth Dawson B.S. 1949, University of Maryland	Md.
DeGarmo, Charlotte Lou	D.C.	De Marr, Frederick Stanley A.B. 1949, University of Maryland	D.C.
DeGast, Leonard Aric	Md.	Demas, Esther Peter	N.J.
Dense, Daisy Georgetown	Belgium	Dembling, Paul Gerald A.B. 1940, A.M. 1942, Rutgers University	Md.
Deen, Carl George, Jr.	D.C.	Dembrow, Daniel William B.S. 1942, The George Washington University	Hawaii
de Graeff, Herma Marie	Conn.	Demetz, Mary Katherine Dempsey, Donald Crammer	Va. D.C.
DeGrandi, Joseph Anthony B.S. 1949, Trinity College	Ohio	Dempsey, Howard Calvin Dempsey, James Paul	Pa.
Dehnelt, Margaret Lewis Ed.B. 1939, University of Toledo	D.C.	B.S. 1941, University of Scranton M.S. 1949, Columbia University	D.C.
Deibler, David Hobson, Jr.	D.C.	Dempsey, William Edward	D.C.
Deichler, William Edgar A.B. 1949, University of Maryland	Ohio	Demshock, John Joseph	Va.
Deiderich, Howard Carl	D.C.	DeMurguondo, Helen Stuart B.S. 1945, College of William and Mary	Va.
Deisen, Shirley Norma	Va.	Denbo, Robert Wayne B.S. 1929, United States Naval Academy	Va.
Deily, Francis Wilson	Md.	Denham, Richard Marvin Denham, Sara Belle	Ky. Pa.
Dense, Richard Albert	D.C.	Denman, Thomas Boinia Dennings, Barbara Jeanne	Colo.
DeJong, Betty	D.C.	A.B. 1949, Stanford University	Ohio
DeKeyser, Henry Leo A.B. 1937, A.M. 1942, New Jersey State Teachers College, Upper Montclair	Md.	Dennings, John Patrick	D.C.
DeKornfeld, Thomas John B.S. 1948, The George Washington University	Pa.	Dennis, John Gardner	Md.
DeLaBar, John Henry A.B. 1948, The George Washington University	Tex.	Dennis, Louis Rothan, Jr.	D.C.
De La Garza, Vincent Monico	D.C.	Dennis, Rebyurn Hicks, Jr.	Calif.
Delahanty, Thomas Washington	Va.	Dennis, Virginia Loretta A.B. 1935, University of California A.M. 1947, New York University	Va.
Delaney, Henry Leon	La.	Denna, Bryce Frederic B.S. 1940, United States Military Academy	Va.
Delaney, John Aloysius	Mich.	A.M. 1949, University of Missouri	Va.
Delano, Willard Alfred B.S. in Ed. 1940, Wilson Teachers College	Md.	Denny, Judith L.	D.C.
M.Ed. 1941, University of Buffalo	D.C.	Denny, Paul Morrison	Va.
Delasos, Lewis A.B. 1948, The George Washington University	D.C.	Denny, Robert Evans B.S. 1909, Davidson College	D.C.
Delean, John Felecian	D.C.	deNovens, Marie A.B. 1937, Hunter College	D.C.
DeLeon, Olaf Grana	D.C.	Dent, Eileen Winifred	Pa.
Delevaux, Maryse Helen	D.C.	Dent, Jessie Elizabeth B.S. 1942, Skidmore College	D.C.
Delgado, Angel Luis	D.C.	Dent, William Theophilus	Nev.
DeGrosso, Peter Albert	D.C.	Denton, Ralph Lloyd	D.C.
D'Elna, Peter Alfred	N.J.	Dentz, Robert Joseph	N.Y.
Deliman, Robert Michael B.S. 1949, University of Pittsburgh	Pa.	DePaoli, Dora Marie	Md.
Deliyannis, Penelope	D.C.	dePaul, Joseph Alfred	D.C.
Delk, Frank S.	D.C.	dePianelli, Felicia Worthington	W.Va.
Dell, Albert Hampson	Md.	D'Euro, Albert Lincoln	Pa.
Dell, Vernon Clifton	Va.	DePond, Frank James A.B. 1946, West Virginia University	Pa.
Della Valle, Alexander Albert	D.C.	Deppe, William Lee	D.C.
Dellinger, Martha Bruce	D.C.	dePutron, William Bentley	Conn.
Dellinger, Martha Virginia	D.C.	DeRagon, John Rudolphe	Ohio
Del Monte, Gloria Virginia	D.C.	DeRemer, Bernard Ray	D.C.
Delong James C. A.B. 1949, Michigan State College	D.C.	deRham, Anne Marie	D.C.
de los Rios, Lolita	D.C.	Derkey, Lee Perry	Va.
Deip, Richard Lee	D.C.	DeRoco, Vernon James	Ill.
Del Priore, Francis Rocco A.B. 1941, New York University	Md.	DeRoin, Gene A.B. 1949, Cornell University	Mass.
Del Russo, Alessandra Luini Lit. Dr. 1939, Milan State University, Italy	Md.	DeRosa, Edward Francis A.B. 1947, The George Washington University	
Junior. Dr. 1943, Pavia State University, Italy	D.C.		
Del Russo, Carl Richard			
Deising, Lucy Mary			

DeRosa, Felix Michael	N.Y.	DeWitt, Maynard Browning	D.C.
A.B. 1941, Cornell University		DeWitt, William Bradley	Md.
LL.B. 1943, Fordham University		A.B. 1940, Howard College	
Derrick, Duane Greenwood	Utah	Dewoody, Harry Edward	D.C.
A.B. 1948, LL.B. 1948, The George Washington University		Diamant, Lula Ruth	D.C.
Derrickson, Harold Lee	Md.	Diamond, Jack Kenneth	D.C.
Derry, William Gerald	W. Va.	Diamond, Joyce	D.C.
DerTatevason, Samuel	Va.	Diamond, Lois W.	D.C.
Deschaine, Bernard Richard	D.C.	Diamond, Melvin Harry	D.C.
DesChef, Charles Francis	Md.	Diamond, William Thomas, Jr.	Tenn.
Desha, John Rollin II	Va.	A.B. 1941, Union University	
DesJardin, William Paul	D.C.	LL.B. 1948, University of Virginia	
Desjarlais, Henry Samuel	Mass.	Diavatis, Nicholas Damos	D.C.
Deskin, Elaine	D.C.	Diaz, Adolfo Solorzano	D.C.
A.B. 1947, The George Washington University		Diaz, Norman E.	D.C.
DeSouza, Pamela Constance	Va.	Dibble, David Eugene	D.C.
Dessez, Lester	D.C.	Dibble, Duane William	Md.
Dessez, Sally Chew	D.C.	DiBenedetto, Anthony Domenico	N.Y.
A.B. 1948, The George Washington University		B.S. 1944, Villanova College	
DeStefano, Angela Margaret	D.C.	DiBlasi, Clarence	D.C.
Detling, Harold Clarence	Calif.	Dihner, Richard Eugene	N.Y.
Detmer, Edwin Charles	Md.	B.M.E. 1941, College of the City of New York	
Detoric, George William	Va.	Dibrell, Dana Arrington	Va.
B.S.S. 1948, Georgetown University		A.B. 1949, Radford College	
Detrie, Evelyn Louise	Wis.	DiCaprio, Jennie Grace	N.J.
Detweiler, Mark George	Pa.	Dichter, Jack C.	N.J.
Detwiler, Charles Robert	D.C.	Dick, Arthur Freeman	Va.
Detwiler, Harry Grubb	Pa.	Dick, Charles Herbert	D.C.
B.S. 1936, Westchester State Teachers College		A.B. 1950, University of Maryland	
DeUngria, Jose Santiago	Philippines	Dick, Joan Cotton	N.Y.
Deutrich, Bernice Marie	D.C.	Dickens, Fred William, Jr.	Minn.
Deutsch, Joseph	D.C.	A.B. 1949, University of Minnesota	
A.B. 1947, Brooklyn College		Dickens, Joy Alice	D.C.
B.S. 1948, Pennsylvania State College		A.M. 1918, University of Wisconsin	
Deutsch, Norman	D.C.	Dickens, Nancy Marie	Va.
B.Ch.E. 1944, College of the City of New York		Dickens, Thomas Nolan	Md.
M.Ch.E. 1948, New York University		Dickerson, Benjamin Franklin	Va.
Devan, Christopher Bartram	D.C.	Dickerson, Mary Lou	N.C.
Devan, Thomas Arthur	D.C.	Dickey, Pauline	Wash.
A.B. 1948, The George Washington University		Dickson, Alexander Branch	Va.
DeVaughn, Robert Wilson	Ga.	Dickinson, Helen Douglas	Va.
Devay, Robert Brown	Ohio	Dickinson, Nancey Ruth	Va.
Devereux, John Francis	N.Y.	A.B. in Ed. 1945, Mary Washington College	
Devereux, Nicholas Edward III	N.Y.	Dickson, Thomas Stuart	Va.
A.B. 1942, Harvard University		Dickmeyer, John T.	Va.
Deverman, George	Ill.	A.B. 1949, University of Massachusetts	
Devers, Evelyn G.	D.C.	Dicks, Judson Ross	N.C.
A.B. 1949, The George Washington University		A.B. 1948, A.M. 1949, University of North Carolina	
DeVico, Luigi	N.Y.	Dickson, James Meek	Md.
Devlin, Charles, Jr.	D.C.	Dickson, James Newton, Jr.	Va.
Devine, Isabel Josephine	Md.	Dickson, Robert Carl, Jr.	D.C.
Devine, John Gilbert	Pa.	Dickson, William Francis	Va.
B.S. 1949, Susquehanna University		Dillake, Betty Gore	Va.
Devitt, William Aloysius, Jr.	N.Y.	DiDonato, Mildred C.	D.C.
Devlin, Harold Michael, Jr.	D.C.	Ph.B. 1948, Marquette University	
Devlin, Paul Andrew	Va.	Diehm, Ira Cortland	Pa.
Dew, Jackson Leonard	D.C.	B.S. 1949, Franklin and Marshall College	
Dewberry, Raymond Allen	D.C.	Dieker, Georgia Selph	Va.
Dewberry, Sidney Oliver	D.C.	Diemer, Fred Joseph	N.Y.
DeWeese, William Robert	D.C.	Diemer, Robert Arthur	D.C.
Dewey, Richard Arthur	Ohio	Dienden-Crockett, Jeffery Rosher	England
Dewing, June Carol	Peru	Dierks, John Henry	Pa.
DeWitt, James Corwin	Va.	Dieter, Carlisle Lyon	Va.
B.S. 1943, Mount Union College		Dieter, Rose Ward	Va.
Dewitt, Kurt	Va.	Dieterich, William Hyde	S.C.
A.B. 1941, Reed College	D.C.	B.S. 1937, D.V.M. 1939, Kansas State College	
		Dietrich, Alice Schneider	N.Y.
		Dietrich, Diane Landre	Va.

Dietrich, E. Donald	Md.	Dixon, Nancy Elma	Va.
Dietrich, Jack Mitchell	Kans.	B.S. 1940, Madison College	N.Y.
Dietterle, Mary Elizabeth	Va.	Dixon, Robert Galloway	
Dietz, Albert Edward	D.C.	A.B. 1943, Ph.D. 1947, Syracuse	
Dietz, Glenn Allen	Fla.	University	Md.
Dietz, Ronald Lee	Ill.	Dixon, Thomas Wilson	
Dietz, Stanley Martin	N.Y.	LL.B. 1949, The George Washington	
Difenderfer, Anne Lenoir	D.C.	University	Md.
Dille, John Edward	D.C.	Dixon, William Joseph	
M.B.A. 1929, University of Michigan		A.B. 1947, University of Utah	Md.
Difippo, Marion Murphy	D.C.	Doane, John Emil	
DiGangi, James John	Conn.	B.E.E. 1936, The George Washington	
B.S. 1934, College of William and		University	D.C.
Mary		Dobak, Philip Louis	N.Y.
DiGugliano, Anna Maria S.	D.C.	Dobbis, Barbara	N.Y.
B.S. 1939, Wilson Teachers College		Dobkin, Abraham	
Diliberto, Joseph Charles	Va.	A.B. 1948, The George Washington	
B.M.E. 1936, Stevens Institute of		University	Md.
Technology		Dobres, Jeanne Louise	
Dills, Charles Gordon	Md.	A.B. 1949, The George Washington	
Dillard, Terry Buysl	Tex.	University	Va.
Dillehay, Thomas Jefferson, Jr.	Tex.	Dobrowski, Helen Little	
B.B.A. 1927, A.M. 1929, Baylor		A.B. 1943, University of North	
University		Carolina	Va.
Dilley, Donald LeRoy	Colo.	Dobson, Richard Hal	
Dilley, Luther Luke LaSalle	Wash.	B.S. 1949, Kansas State College	Va.
Dill, Nancy Tucker	D.C.	Dodd, Harold Gregory	D.C.
Dillon, Charles Richard	Md.	Dodds, Alan Hawkins	
Dillon, Edward Robinson	D.C.	B.S. 1949, Georgetown University	D.C.
Dillon, Joe Clyde	Va.	Dodds, Chancery Yandell	Pa.
Dillon, Robert Sherwood	D.C.	Dodds, Madeline Mahuran	
Dillon, Robert Warren	D.C.	A.B. 1944, Pennsylvania State College	D.C.
Dillon, Thomas Power	Md.	Dolek, Tremue Ann	
B.S. in B.A. 1939, University of		A.B. 1948, University of Michigan	Md.
Pittsburgh		Dodge, John Parker	
Dills, Charles Everard	N.D.	A.B. 1949, Johns Hopkins University	D.C.
B.S. 1949, North Dakota State		Dodge, Luisa Burns	
College		A.B. 1942, Smith College	Va.
DiMaggio, Anthony Joseph	N.J.	Dodge, William Bannard	Va.
B.S. 1936, University of Maryland		Dodson, Elba Arleen	Va.
DiMaio, Marie Ann	R.I.	Dodson, Hugh Howie	Mass.
DiMaria, Sebastiano	Pa.	Doe, Norman Ross	
DiMartino, Horace Robert	Mass.	A.B. 1948, Marshall College	Ill.
Dimmette, Claude Chester, Jr.	D.C.	Doernenburg, Helen Johanna Hulda	Minn.
DiMona, Joseph Michael	N.J.	Doerr, Wallace F.	
A.B. 1947, Duke University		A.B. 1942, A.M. 1947, Yale University	Va.
Dinges, Cindy	Va.	Doffmeyer, Clyde Evans	W.Va.
Dinsler, Richard William	Ill.	Doggett, Hilda Lee	
Dinkins, Edward M.	D.C.	A.B. 1941, Shepherd College	Va.
Dinning, Mary Elizabeth	Ky.	Dohner, John Ellis	Mass.
Dinsmore, Ruth Ann	Mass.	Doire, Henri Severe	Va.
B.S. 1940, Massachusetts State Teachers		Dolan, Virginia Eve	Alaska
College, Worcester		Dolan, William Augustine, Jr.	
Dion, Marie Berthe	D.C.	B.S. 1926, United States Naval	
Dion, Robert Lester	D.C.	Academy	N.Y.
Dionso, David	D.C.	Dolecki, Joseph Francis	
DiPasquale, Theresa Aurora	D.C.	A.B. 1946, University of Alabama	D.C.
DiTippolito, Mario	D.C.	Dolecki, Yolanda Toth	D.C.
Direstadian, Helen	N.Y.	Dollar, Henry	
Dischinger, Frederick William, Jr.	N.Y.	B.C.E. 1937, College of the City of	D.C.
Dishaw, Ira Hugh	N.Y.	New York	
B.S. 1940, A.M. 1941, Syracuse		Dolnick, Ethel Helen	
University		B.S. 1945, A.M. 1947, The George	
A.M. 1947, Harvard University		Washington University	Va.
Dishun, George Melvin	D.C.	Doman, Lois Jenkins	
Disque, Allen William	Md.	A.B. 1933, College of William and	
Divine, William Beach	Va.	Mary	Wis.
Dix, Edgar LaRue	D.C.	Domann, William Arthur	
Dix, Francis	Md.	B.S. 1948, University of Wisconsin	Mass.
Dixon, Cloyce Irven, Jr.	Md.	Domingue, Anita Therese	
Dixon, Edgar Allen	D.C.	A.B. 1948, Rivier College	D.C.
Dixon, George Carlton	D.C.	Donadei, Roberto Italo	D.C.
Dixon, John Wainwright	Tex.	Donahay, Justin James	

Donahue, Julia Lillian	Maine	Dorset, Francis Alexander, Jr.	Va.
Donald, Mary Eleanor	D.C.	Dorsey, Guy Houston	D.C.
Donaldson, Allyn Capron, Jr.	D.C.	Dort, Wallace Emerson	Fla.
Donaldson, Frances Flaacke	D.C.	Dossi, Serenus W.	D.C.
A.B. 1925, The George Washington University		A.B. 1942, Indiana State Teachers College, Pa.	
Donaldson, Joan Marie	D.C.	Doswell, Gelon Hann	Ia.
Donaldson, John Charles	Fla.	Douson, Daniel Keating	Va.
Donaldson, John Eldridge, Jr.	D.C.	Dotson, Maryanna Elizabeth	D.C.
A.B. 1949, The George Washington University		A.B. 1948, The George Washington University	
Donaldson, Roy Eugene	W.Va.	Doub, Dorothy Loucille	N.C.
Donelson, Kenneth William	Nebr.	A.B. 1941, Brenau College	
Donics, William	Pa.	Doucarelis, Alexandra	N.Y.
Donlon, Kenneth Lew	Mass.	A.B. 1941, Hunter College	
Donnelly, Albert Lee, Jr.	Conn.	Dougherty, Frank Robert	Md.
A.B. 1947, Yale University		A.B. 1946, The George Washington University	
Donnelly, Henry Joseph, Jr.	Va.	Dougherty, Harold Arthur	D.C.
B.S. 1928, University of Pennsylvania		Dougherty, Harold Joseph	N.Y.
Donnelly, Orville Wright	Md.	Dougherty, Joseph Patrick	D.C.
A.B. 1941, Swarthmore College		Dougherty, Louis Leighton	Pa.
Donnelly, Owen James	D.C.	Dougherty, Thomas James	N.D.
Donnelly, Richard Charles	D.C.	Dougherty, Virginia Baxter	Va.
Donnelly, William Francis	D.C.	A.B. 1935, Texas State College for Women	
Donoghue, William James, Jr.	D.C.	Dougherty, Wayne J.	Iowa
Donohue, James Francis	Md.	A.B. 1941, University of Iowa	
Donohue, Harold	Md.	Doughton, Rosemond Marie	D.C.
Donohue, John Andrew	Md.	Doughty, James Irving	D.C.
Donovan, Catherine Angela	D.C.	Douglas, James Andrew	D.C.
B.S. 1947, California State Teachers College, Pa.		Douglas, James Homer	D.C.
Donovan, Rita Marie	Pa.	Douglas, James Shepard	D.C.
B.S. 1942, California State Teachers College, Pa.		B.S. 1944, United States Military Academy	
Dooley, James Joseph	D.C.	A.M. 1949, University of Missouri	
Dooley, Joseph William	Va.	Douglas, Margaretta Vantusl	D.C.
Dooley, Rose-Marie	Canada	A.B. 1945, A.M. 1949, University of North Carolina	
Dooley, Walter Francis, Jr.	D.C.	Douglass, Arthur Allen, Jr.	Va.
Doolittle, Glenn Alden	Tex.	Douglass, John Robert	Va.
B.S. 1939, Southwest Texas State Teachers College		Douglass, Martha Anne	Md.
M.B.A. 1949, University of Texas		Douglass, Paul Manuel, Jr.	Va.
Doolittle, Leroy Clark	Md.	Douma, Allene Vartia	D.C.
A.B. 1949, American University		Doutrich, Jewel Elizabeth	D.C.
Doolittle, Thomas Butler, Jr.	Md.	B.S. 1946, Oklahoma College for Women	
A.B. 1949, Western Maryland College		Dove, Charles Vincent	D.C.
Doonan, Virginia Mary	D.C.	Dover, Edward Adolph	Mich.
Doong, Henry	N.J.	B.S. 1942, Michigan State Normal College	
Dopkin, Sylvia	N.Y.	Dow, Helen May	D.C.
Doran, Stephen Mark	Mich.	Dow, Howard Fremont	Va.
Dorasavage, William Joseph	Pa.	Dow, Mary	Mass.
L.L.B. 1949, Catholic University of America		Dow, Tsung I.	China
Dorf, Paul Aaron	Md.	A.B. 1946, National Central University	
Dorfman, David	Md.	Dowd, George Gordon	Wash.
Dorfman, Hilliard	Pa.	Dowd, William H.	Va.
Dorje, William Matthew	N.Y.	B.S. 1948, Boston College	
Doriety, James Douglas	N.J.	Dowell, Arthur Edward III	D.C.
B.S. 1946, Villanova College		B.S. in E.E. 1943, Princeton University	
Dorman, Walter William	Va.	Dowell, Earl Simeon	Ill.
Dorosh, Edward Peter	N.Y.	B.S. 1947, University of Illinois	
Dorr, Bernard Francis	D.C.	Dowling, Richard Emmett	N.Y.
A.B. 1902, Williams College		Dowling, Walter James	Va.
Dorr, Lorita	D.C.	Downer, Charles Thomas	Md.
Dorr, Lucile Bertram	D.C.	B.S. 1947, Bowling Green College	
Dorre, Lawrence	Tex.	Downes, John Pershing	N.Y.
A.B. 1948, North Texas State College		Downey, Alma G.	Nebr.
Dorrell, Russell Ellsworth	D.C.	Downey, Dorothy Adelaide	D.C.
B.S. 1934, Carnegie Institute of Technology			
Dorris, Morris Bernard	D.C.		
Dorsey, Jeanette	Va.		

Downey, Francis Xavier B.E.E. 1949, Catholic University of America	Va.	Driscoll, Joseph Patrick A.B. 1941, LL.B. 1949, Harvard University	Mass.
Downey, John Joseph	Mass.	Driscoll, Michael Joseph	D.C.
Downey, Maureen Elizabeth	D.C.	Driscoll, Robert Edward	Pa.
Downing, Joseph Guthrie	Va.	Driver, William Joseph	Va.
Downing, Leslie Burgess B.S. 1920, United States Military Academy	D.C.	B.B.A. 1941, Niagara University	N.Y.
Downing, Matthew Patrick	Va.	Droll, Henry Andrew	Pa.
Downs, Harold Alfred	Va.	Droncy, Paul Vincent	Va.
Downs, Roland McKenzie	Va.	Druckemiller, Donald James	D.C.
Downs, Robert Jack	Okla.	Drumm, Anna Mary	D.C.
Downton, James Bertram A.B. 1930, University of Buffalo A.M. 1941, Duke University	Md.	B.S. 1946, Mansfield State Teachers College, Pa.	Va.
Doyka, Donna Gray	D.C.	Drummond, Frank Brown	D.C.
Doyle, Ann Catherine	Colo.	Drummond, Thomas Darrell	One
Doyle, Bert Molyneux, Jr.	R.I.	Druse, Katharine	D.C.
Doyle, John Benedict, Jr. A.B. 1948, University of California at Los Angeles	Calif.	A.B. 1917, Iowa Wesleyan College A.M. 1928, Columbia University	D.C.
Doyle, Mahlon Eugene A.B. 1949, The George Washington University	D.C.	Drysdale, Charle Carlton	C.S.
Doyle, Peter Joseph	D.C.	Drysdale, Raymond Rufus	One
Doyle, T. Roy	D.C.	A.B. 1936, Harvard University	D.C.
Doyle, Vincent Joseph	Md.	LL.B. 1949, Cleveland-Marshall Law School	D.C.
Doyle, William Joseph	D.C.	Dubendorf, Jeanne Miller	D.C.
Drag, Theodore Frank	D.C.	Dubester, Dorothy Ennis	Pa.
Drasco, Roland Paul B.S. 1941, University of Idaho B.S. in Chem. 1949, The George Washington University	N.C.	A.B. 1941, Brooklyn College	N.Y.
Draine, Dorothy Ellen	Iowa	Dubnik, Celia S.	D.C.
Drake, Mary Lou A.B. 1944, University of Iowa	New Zealand	Dulase, Jack Boyd	D.C.
Drake, Nadine Grace F.I.C.M. 1947, London College of Music	Mass.	Dubroff, Seymour	D.C.
Drake, Robert Coolidge	Minn.	A.B. 1948, The George Washington University	Pa.
Draper, M. Luel John	Ohio	Ducar, Anna Deane B.S. 1942, California State Teachers College, Pa.	Mass.
Draper, Elizabeth Kohl A.B. 1924, A.M. 1933, The George Washington University	D.C.	Duchane, Joseph Alfred Victor	D.C.
Draper, William Alfred B.S. 1945, Wilson Teachers College	D.C.	Duchene, Edmund F.	D.C.
Drapkin, Leon Isadore	Md.	Duchene, Emily Mary	Va.
Dratwick, Christine H.	Ill.	Duckworth, Alan Clark	Pa.
Drayer, Clarence Prowell	D.C.	Duda, John	D.C.
Dredge, Talbot William	D.C.	Duda, Paul Joe	Va.
Dreifus, Jordan Albert A.B. 1949, Harvard University	D.C.	Dudley, Albert Frederick	Va.
Dreka, Mary Catherine	D.C.	Dudlev, George Hayden	Va.
Dreos, George Calvin B.S. 1945, University of Alabama LL.B. 1948, The George Washington University	D.C.	Dudley, Joseph Rencher	Md.
Dreppard, Hazel A.B. 1935, Drury College	Kans.	Dudley, Paul Lee B.S. 1926, United States Naval Academy	D.C.
Dressel, Robert James	D.C.	Dudzik, Sylvester Peter	D.C.
Dressler, Dorothy Anne	Pa.	Duerksen, Eleanor	D.C.
Dries, Edward Thomas	N.Y.	A.B. 1946, Bethel College	D.C.
Drimmer, Miriam Weinberg	N.Y.	Duerksen, Sylvia	Tenn.
Drummer, Saul E. B.S. 1940, The George Washington University	N.Y.	Duff, David Dryden A.B. 1948, The George Washington University	Pa.
Drinnan, John Thomson	Va.	Duff, Marie	D.C.
Driscoll, John Francis Carl	Va.	A.B. 1945, The George Washington University	Md.
Driscoll, James Raymond	D.C.	Duffy, Charles Creighton B.S. 1949, University of Nevada	Md.
Driscoll, Joan	Conn.	Duffy, John Edward	Pa.
Driscoll, John Joseph	D.C.	Duffy, Marilyn Margaret	N.Y.
		Duffy, Patricia Ann	Pa.
		Duffy, Rose Mary A.B. 1944, Misericordia College	N.Y.
		Duffy, William LeClair	D.C.
		Dufresne, Joseph Paul B.S. 1943, LL.B. 1948, Georgetown University	Ill.
		Duft, Donald Matthew B.S. in E.E. 1949, Illinois Institute of Technology	Va.
		Dugan, Albert Irvin, Jr.	Va.
		Dugan, Beverly Beam	

Students Registered

425

Dugan, Michael Hugh	W.Va.	Dunn, Howard	N.Y.
Dugan, Thomas Joseph	Md.	A.B. 1936, College of the City of New York	
B.S. 1933, Catholic University of America		A.M. 1940, Columbia University	
Dugdale, Donna Elizabeth	D.C.	Dunn, Mildred Eddy	D.C.
A.B. 1949, The George Washington University		Dunn, Theodore Franklin	N.Y.
Duggan, John Francis	D.C.	A.B. 1948, The George Washington University	
Duggins, Virginia A.	Va.	Dunn, Walter Lee	Va.
A.B. 1942, Sweet Briar College		B.S. 1949, Montana State College	
DuGoff, Albert Morris	D.C.	Dunning, Alice Lansley	D.C.
Duhonich, Anne	Pa.	A.B. 1941, Queens College	
Duke, Thomas Maurice	Va.	A.M. 1944, Clark University	
Dula, Arthur McKee	Va.	Dunning, Earle Bogart	Calif.
Dula, Lillian Lorraine	D.C.	Dunning, William Charles	D.C.
Dulaski, Benedict Joseph	Mass.	Dunnington, Elgin Adams, Jr.	Calif.
Dulayeris, Anastasia	Wis.	Dunphy, Robert Giles	R.I.
Dulcie, Jerome Joseph	N.J.	Dunston, Chadwick	Hawaii
Dulin, Dorothy Virginia	D.C.	Duplinsky, Edward Nicholas	Conn.
Dulin, Garretson	Calif.	A.B. 1947, The George Washington University	
B.S. 1948, University of California at Los Angeles		Dupre, Forrest Francis	R.I.
Dulkie, Joseph Augustine	Mass.	Dupuy, Harold James	La.
Dum, Frank Bryan	Va.	Durant, Jack Wybrant II	Va.
Dumaine, Gabriel Romain	Va.	Duras, Barbara Elizabeth	Va.
A.B. 1948, The George Washington University		Durbin, Sol	Va.
Dunavent, Roy Joseph	D.C.	B.S. in M.E. 1940, Oregon State College	
Dunaway, Helen Elizabeth	Iowa	Durham, Mary Sherrill	Ky.
Dunbar, John Paul	D.C.	Dorkatz, Doris Jean	Mich.
Dunbar, William Beal	D.C.	Dorain, William James	D.C.
Duncan, Carolyn Aimes	Pa.	Dorman, Elizabeth Claire	Md.
Duncan, Donald George	D.C.	Dornbaugh, Evelyn Grace	D.C.
Duncan, Donald Richard	D.C.	A.B. 1944, The George Washington University	
A.B. 1948, Ohio State University		Durr, Lawrence Ervin	Md.
Duncan, Harold Owen	Md.	Durso, Alfred Mario	Mass.
B.C.S. 1941, University of Georgia		Dusenbury, Richard Green	S.C.
Duncan, James Thomas	Ga.	A.B. 1946, University of South Carolina	
Duncan, John David	W.Va.	Duska, John George	N.J.
Duncan, John Kenneth	Va.	Dussault, Henry A.	N.H.
A.B. 1947, The George Washington University		A.B. 1940, The George Washington University	
Duncan, John Ogilvy	Va.	Dutcher, Winifred C.	D.C.
Duncan, Paul, Jr.	Md.	Duthie, Charles Lockwood	Va.
Duncan, Robert L.	Ind.	Duvall, Mabel Belle	Va.
A.B. 1935, DePauw University		A.B. 1944, The George Washington University	
M.S. 1940, Butler University		Duvall, Russell Byng	Md.
Duncan, Samuel Alex	Va.	Dwass, Meyer	S.C.
Duncan, William Edward	Va.	A.B. 1948, The George Washington University	
Dundon, George Thomas	N.J.	A.M. 1949, Columbia University	
Dunfee, Bernadine Langdon	Ohio	Dwass, Shirley Labowitz	Pa.
B.S. in Ed. 1939, Wilmington College		Dworshak, Calvin George	Idaho
Dunkle, Ann	Va.	Dworzky, Dena Leigh	Md.
Dunlap, Frederick Leroy	Va.	Dwyer, Helen Marguerite	Mass.
Dunlap, Maxfield Hurlbut	Calif.	Dwyer, Jean Ferguson	Mass.
Dunlap, Ruth Elaine	D.C.	A.B. 1948, The George Washington University	
Dunn, Aime Laura	D.C.	Dwyer, Joseph Joseph	D.C.
Dunn, Alice	S.C.	A.B. 1947, The George Washington University	
Dunn, Arnold	N.Y.	Dwyer, Louis Eugene	Va.
Dunn, Bertha Wakefield	Va.	B.S. 1948, American University	
A.B. 1941, Howard College		Dwyer, Maude Ronnie	N.Y.
Dunn, Bess Amelia	D.C.	Dwyer, Vincent William	N.Y.
A.B. 1937, Immaculate Heart College		Dyck, William Donald	Kans.
Dunn, Constance June	D.C.	Dye, Mary Charleen	Va.
Dunn, Dorothy	Nebr.	Dyer, James Arthur	Va.
A.B. 1945, University of Nebraska		Dyer, Marcia Clair	D.C.
Dunn, Elizabeth Pinkerton	D.C.	Dyer, Robert Francis	D.C.
Dunn, Eugene Francis	Va.		
Dunn, Florence Wright	Md.		
Dunn, Frances Esther	Calif.		
Dunn, George Martin	D.C.		
A.B. 1949, The George Washington University			

Dysart, Thomas Gilmore	Md.	Eckard, Joseph Daniel	N.C.
B.S. in M.E. 1943, University of Missouri		Ecker, Naomi Esther	D.C.
Dysland, Norma Carroll	Md.	A.B. 1948, University of Maryland	Va.
Dziepak, Anthony Joseph	N.J.	Eckerle, Norma Hallman	Va.
Dzunda, Stephen Duri	Ind.	Eckerle, Richard Lawrence	P.S.
		Eckert, Raul Miguel	N.Y.
		Ecklund, Everett Theodore	D.C.
		Economon, Foteny	D.C.
		Economon, Straty Harry	D.C.
		Economopoulos, Helen Mary	N.Y.
		Edelman, Leonard	D.C.
		Edelschein, Theodore Edward	D.C.
		Edelston, Jerry	Ohio
		A.B. 1949, University of Cincinnati	Md.
		Eden, Sara Baker	Md.
		A.B. 1943, University of Oklahoma	Md.
		Eden, Worth	Md.
		Eden, William Earl	N.Y.
		Edenbaum, Robert Lawrence	Va.
		Edgar, Jean Nelson	D.C.
		Edgerton, Ann	Pa.
		Edgerton, Edward Joseph	D.C.
		Edler, Karl Frederick	Maine
		Edminster, Noah Israel, Jr.	
		A.B. 1941, Bates College	Va.
		Edmonson, Frances Everhart	Fla.
		Edmonson, Francis Livingston	
		Ph B. 1924, Emory University	Md.
		Edmonson, Ruby Mae	Va.
		Edmondson, Samuel Wedding, Jr.	
		A.B. 1947, Emory and Henry College	Md.
		Edmondson, Violet Frances	Va.
		Edmondston, William Carbery	Va.
		Edmonds, James Bradt, Jr.	
		A.B. 1941, The George Washington University	Ill.
		Edwall, Warren Emerson	Md.
		Edwards, Aletta Prentiss	D.C.
		Edwards, Elizabeth	Va.
		Edwards, Garth Williams	
		B.S. 1939, University of Illinois	Va.
		Edwards, Henry William	
		B.Ed. 1937, Montana State Normal College	Fla.
		Edwards, James Edwin	
		A.B. 1935, LL.B. 1946, The George Washington University	D.C.
		Edwards, John Fanning, Jr.	Kent.
		Edwards, Marion William	Md.
		Edwards, Rosaline Mary	
		B.S. in Ed. 1934, A.M. 1935, Fordham University	Ohio
		Edwards, Rostand Hubert	D.C.
		Edwards, Walter Robert	
		A.B. 1941, The George Washington University	D.C.
		Edwin, Gabriel	
		B.S. 1949, The George Washington University	Ohio
		Efron, Reuben	Ore.
		Efteland, Robert Grant	
		A.B. 1941, Stanford University	N.J.
		Egan, Anna Virginia	
		A.B. 1948, The George Washington University	D.C.
		Egan, Donald Joseph	D.C.
		Egan, Laurence Donohue	Md.
		Egbert John Paul	Md.
		Egger, Roscoe Lynn, Jr.	
		B.S. 1942, Indiana University	Va.
		Egleston, Paul Cornwell	D.C.
		Egloff, Edward	

E

Eads, Harold James
Eagan, Frances Ellen
Eagan, Thomas Legett
Eaholtz, Galen Martin
Eaker, Herbert Lowell
Eanet, Charles Harold
Eanet, Morton Philip
A.B. 1947, Yale University
Eardensohn, Clifford John
Earich, Douglas Ray
A.B. 1949, Lebanon Valley College
Earl, Ira Roy
B.S. 1948, Brigham Young University
Earl, Owen Ken
A.B. 1948, Brigham Young University
Earle, Elizabeth Rebecca
Earle, John Howard
B.S. 1941, Pennsylvania State College
Earle, William Kehr
B.S. 1940, United States Coast Guard Academy
Earley, William Thomas
Earls, Marilyn
Early, Edmund Ayres
Early, Edward Shea
A.B. 1948, Bowdoin College
Early, Robert Elliott
Early, William Eugene
Early, William Norman
Earmann, Fay
Easman, John William, Jr.
Easman, Thomas Ransom
Earnest, Elmer Dean
Earnheart, Frank Jones
A.B. 1947, University of North Carolina
East, William Francis
A.B. 1946, Western Maryland College
Easter, James Franklin, Jr.
Eastin, Roy B.
A.B. 1942, A.M. 1946, The George Washington University
Eastman, Paul Wilberforce, Jr.
B.S. in C.E. 1948, University of Missouri
Eastman, Samuel Thomas
Easton, Carl Wilbur
Eaton, Stanley Warren
Ebel, Joyce Marie
Eberdt, Jess Samuel
A.B. 1941, University of Alabama
Eberhart, Francis Claude
A.B. 1940, University of Dubuque
LL.B. 1948, University of Florida
Eberly, Joyce Eileen
Ebersole, William Perkins
Ebert, Eugene
Ebert, William Joseph
Eby, Amy Bowen
A.B. 1949, Shepherd State Teachers College
Eby, Phillipa Randolph
Eckelston, Harold Norris, Jr.
Echegaray, Miguel de

Egly, Paul Wesley A.B. 1946, University of California at Los Angeles	Calif.	Elko, George Henry B.S. in Ed. 1941, Indiana State Teachers College, Pa.	D.C.
Ehlers, Louis Ann	D.C.	Elko, Helen	Pa.
Ehrhard, Joseph Julius	D.C.	Ellenberger, Agnes Elisabeth	D.C.
Ehrlich, Bernard Herbert A.B. 1946, LL.B. 1949, The George Washington University	D.C.	Ellenberger, Kenneth Rehl LL.B. 1948, B.S. 1949, Ohio State University	Ohio
Ehrmantraut, Wilfred Russell B.S. 1948, University of Maryland	Md.	Ellenburg, James Russell	Ky.
Eicher, Grace Edith	Va.	Ellenwood, Robert Carrington B.S. in Agr. 1942, Ohio University	Va.
Eicher, William Russell	Pa.	Eller, Robert Whittington	Md.
Eichlin, Edward Charles	Va.	Elliott, Edwin Walter	Pa.
Eicke, Woodward G., Jr.	D.C.	Elliott, Frank Carson A.B. 1949, The George Washington University	Pa.
Eilbert, Richard Lyle	D.C.	Elliott, Jerry Deon	D.C.
Eilenberg, David A.B. 1949, The George Washington University	N.J.	Elliott, Joseph Sire, Jr. A.B. 1940, Washington College	Md.
Eiler, Ernest Earl	Calif.	Elliott, Lois	Va.
Eiler, Marian Margaret	Md.	Elliott, Richard Alton	Va.
Eilers, James Paul	Md.	Elliott, Robert A.	D.C.
Emmer, Margaret Hermann	Va.	Elliott, Robert Stanley	Ill.
Emminger, John Collum	Va.	Elliott, Stephen Lyons	Md.
Einfank, Samuel	Wis.	Elliott, William Homer, Jr. A.B. 1940, Wesleyan College	N.J.
Eitcheber, Albert A.B. 1948, The George Washington University	Pa.	Ellis, Calvin Warren	Ark.
Eiting, Henry William B.S. 1949, Georgetown University	Md.	Ellis, Carl Edison	Md.
Eisenberg, Bernard Carl	D.C.	Ellis, Edward Kerge	Va.
Eisenburger, Dorothy Evelyn	Ohio	Ellis, Frances Howard	D.C.
Eisenhart, George Norman B.S. 1937, Georgia Institute of Technology	N.Y.	Ellis, Henry Herbert	Va.
Eisler, Frederic Robert	N.J.	Ellis, Homer Rudolph, Jr.	N.C.
Eisner, Edith Chelimer A.B. 1946, Duke University	D.C.	Ellis, James G., Jr.	N.Y.
A.M. 1947, Columbia University	N.Y.	Ellis, John Reavis	Ga.
Eisner, Jerome	N.Y.	Ellis, Louise Mayo A.B. 1927, Arkansas College	Ark.
Eissner, Mark, Jr.	N.Y.	Ellis, Marguerite Alice	D.C.
Ekbero, Bernell Karin A.B. 1941, Lawrence College	D.C.	Ellis, Marian Bissell	N.Y.
Ekendahl, Lillian Mabel	Pa.	Ellis, Nathan B.C.S. 1948, Drake University	N.Y.
Ekman, Donald Quintin	D.C.	Ellis, Robert Arthur	D.C.
Elam, Barbara Jean	Va.	Ellis, Robert Kekumu	Hawaii
Elam, James Abner	Va.	Ellis, Roberta Anne	Md.
Elder, Helen Koch	D.C.	Ellis, Ruth Joy	D.C.
Elder, John Francis	Va.	Ellis, William Ace	Mo.
Eldredge, Robert Breene A.B. 1948, Duke University	Vt.	Ellison, Charles Dewey, Jr.	Tenn.
Eleftherios, Peter Apostolos A.B. 1948, Ohio State University	Mass.	Ellison, Maxell	Tex.
Elf, Martin Arthur	Pa.	Ellison, Oliver Thomas	Iowa
Eliades, Homer Constantine A.B. 1949, University of Virginia	Va.	Ellison, Teddy Roosevelt	Ky.
Elinson, Jack B.S. 1937, College of the City of New York	N.Y.	Ellison, Walton Durrell, Jr. B.S. 1949, University of Colorado	N.M.
A.M. 1946, The George Washington University	N.Y.	Ellman, Margaret Susanne	D.C.
Eliot, Arthur B. B.F.E. 1949, College of the City of New York	N.Y.	Ellowitz, George	Md.
Eliot, Theodore Lyman, Jr. A.B. 1948, Harvard University	Calif.	Ellsworth, Charles West, Jr. B.S. 1947, University of Maryland	Md.
El-Khoury, Fouad	D.C.	Elly, Patricia A.B. 1949, Notre Dame College	Md.
Elkin, Anne	Ill.	Elman, Josef Katten	D.C.
Elkin, Benjamin A.B. 1949, The George Washington University	Ill.	Elmendorf, Richard Arthur	D.C.
Elkin, Evelyn	Ill.	El-Modjadh, Mohamed Shoub	D.C.
		A.B. 1948, First University of Cairo	
		Elmore, Cecil Franklin	D.C.
		Elmore, Willett	D.C.
		Elms, Betty Jane	Kans.
		Elrod, Mary Elma	D.C.
		Elstad, Victor Bernhard A.B. 1941, St. Olaf College	Va.
		Elstrand, John Grover A.B. 1930, Texas Christian University	D.C.
		Edward, Elizabeth Anne A.B. 1949, Trinity College	Md.
		Elwell, Patricia Evelyn	Maine

Elwell, Richard Brans	D.C.	Epstein, Jerome Harold	D.C.
Fla, George Franklin	Pa.	A.B. 1947, New York University	
Elv, Marvin Thomas	W.Va.	A.M. 1948, The George Washington University	
Elv, Robert Broughton	Va.		Mass.
A.B. 1936, Emory and Henry College		Epstein, Marion	
L.L.B. 1926, L.L.M. 1948, The George Washington University		A.B. 1949, The George Washington University	
Embler, Ralph Edward	N.J.	Epstein, Marvin Douglas	Md.
Embrey, Lemuel Jackson	Va.	Epstein, Milton	N.Y.
A.B. 1937, L.L.B. 1949, The George Washington University		A.B. 1948, New York University	N.Y.
Embrey, Thomas Carl	D.C.	Erenthal, Joseph	N.Y.
Embry, Wallace M. Kenzie	D.C.	Ergas, Isaac	
Emch, George Frederick	D.C.	B.M.E. 1948, New York University	D.C.
B.S. 1948, Trinity College		Erickson, Patricia Sparks	D.C.
Emerson, Charles William	Md.	Erickson, Robert Lyle	D.C.
Emerson, Edyth Hildegarde	Maine	Erickson, William Murphy	Calif.
Emerson, Geneva Wall	Md.	Erman, Hassan Rifat	D.C.
Emerson, George Alexander	D.C.	Ermlich, Donald Herman	Wash.
A.B. 1943, University of New Mexico		Erp, Majorie Jean	
A.M. 1948, American University		A.B. 1942, Washington State College	D.C.
Emerson, Harold Leonard	Md.	Errera, Irven	Va.
Emerson, Janet	Mass.	Ervin, Suzanne H.	D.C.
Emma, Paschal Joseph	N.Y.	Erving, Madge Easton	D.C.
Emmert, Henry Theodore	Ill.	Eshau, Regina	D.C.
A.B. 1949, Augustana College		Esch, Albert Frederick	Fla.
Emmet, Annmarie	Md.	Esmar, Blanca Gloria	N.Y.
Emmett, William Joseph	D.C.	Eskenaar, Solomon	N.D.
Emory, Arthur Joseph	D.C.	Eskes, James Norman	N.D.
Encinas, Michel	N.M.	Eskes, Juanita Elizabeth	D.C.
B.S. 1949, Georgetown University		Eskite, Wilbur Henry	Va.
Endres, Ewald Franz	N.C.	Eshinger, Frank Robert	
Enever, Grace	Calif.	B.S. 1946, University of New Mexico	N.Y.
Engel, Edward	N.Y.	Esmail, Joseph	
Engel, Estella Keplinger	D.C.	B.S. 1948, John B. Stetson University	D.C.
A.B. 1941, West Virginia University		Espacolini, Louis Manuel	N.Y.
Engel, Lea Kathryn	D.C.	Esperseth, Warren Joseph	Md.
A.B. 1935, A.M. 1937, University of Maryland		Espey, Beatrice Mae Graham	
Engelman, Phyllis Claire	D.C.	A.B. 1938, University of Nebraska	D.C.
Engelstein, Lena Schrager	D.C.	Espile, Felipe Angelus	D.C.
A.R. 1941, B.S. in L.S. 1937, Syracuse University		Espinosa, Francisco Ramón	
Engelthaler, Fred Edward	Ill.	A.B. 1940, A.M. 1943, Stanford University	
B.S. 1948, Illinois Institute of Technology		L.L.B. 1949, Georgetown University	
England, James	N.J.	Essaf, John Joseph	Pa.
Engle, Clarence Hess, Jr.	Kans.	Esser, William Bernard	Va.
A.B. 1944, University of Kansas		Essers, Hendrick August	Md.
English, Chester Edwin, Jr.	D.C.	Estamach, Joseph Anthony	Pa.
Enis, Thalbert Wright	D.C.	Esten, Harold	D.C.
Ennis, Harry Hughes	Utah	Estes, Armand William	Va.
A.B. 1948, Brigham Young University		Estes, Elihu Strong	
Enright, Thomas Martin	Pa.	B.S. 1947, Rutgers University	W.Va.
Enriquez, Jean Gordon	Va.	Estes, Jane Carroll	D.C.
B.S. in H.E. 1949, The George Washington University		Estes, Katherine	Md.
Entler, David Herold	D.C.	Ethier, Henry Edward	D.C.
A.B. 1949, University of Maryland		Ethington, Paul James	D.C.
Entler, Edmond Paul	W.Va.	B.S. 1949, Iowa State College	D.C.
Entler, Norma Jean	D.C.	Ethington, Robert Mack	
Entner, Alvin	Md.	Eitenger, Robert Lee III	
B.S. 1948, Franklin and Marshall College		B.S. 1948, University of North Carolina	Va.
Enyart, Mary Ellen	D.C.	Eubank, David Sutton	
Enzel, Nathan	D.C.	A.B. 1949, The George Washington University	
Ensor, Thomas Henry, Jr.	Va.	Eubank, Elizabeth Dunn	Va.
Epling, Mary Lee	D.C.	B.S. 1948, Virginia State Teachers College, Farmville	
Epley, Mary Ellen	D.C.	Evans, Charlotte Johnson	Va.
A.B. 1948, Hood College		B.S. 1936, University of Michigan	D.C.
Epstein, Bart Jacob	Md.	Evans, Clarence William	
B.S. 1948, Cornell University		B.S. 1932, University of Delaware	Mich.
		Evans, Courtney Allen	
		L.L.B. 1940, University of Detroit	Va.
		Evans, David Robert	D.C.
		Evans, James Paul	

Evans, Joan Ann	Md.	Fagnano, John Michael	D.C.
Evans, John Penhallow, Jr.	D.C.	Faher, Thomas Joseph	D.C.
Evans, Josue Louise	D.C.	Fahnestock, Vernon Lamborn, Jr.	Va.
Evans, Nancy Abreo	D.C.	Fahnestock, James Bowman	Va.
Evans, Norman Dean	Va.	Fahnestock, Jane Lee	D.C.
A.B. 1948, Ursinus College		Fahnestock, Jean Steiner	Md.
Evans, Opal Augusta	Va.	Fahnestock, Robert Herman	D.C.
A.B. 1940, University of Kansas		Fahr, Martin Robert	Va.
City		Fahr, Joseph Stutzman	
Evans, Richard Timothy	Ohio	A.B. 1947, Moulman College	Va.
Evans, Roseland, Jr.	Pa.	Fahr, Martha Christine	Ind.
Evans, Thomas Earl	Va.	Fahr, Robert James	
B.S. 1949, Duke University		A.B. 1947, The George Washington	
Evans, Walker Williams	D.C.	University	D.C.
B.S. 1946, Presbyterian College		Fairbanks, Eugene Francis	
Evans, William Benjamin, Jr.	D.C.	A.B. 1946, University of Kansas	Ky.
B.S. 1949, University of Maryland		Farr, John Cyrus	Pa.
A.M. 1946, Columbia University		Farr, Richard Paul	Tex.
Evans, William George	Pa.	Farr, Robert Noble	Iowa
Eve, Christopher Fitzsimon	S.C.	Farr, Dean Elbert	D.C.
Evensten, Ronald Norman	Va.	Farrweather, Elaine Marie	N.C.
B.S. 1944, University of Minnesota		Farron, Edmund Winston Jordan	
Evenson, Norma Doris	D.C.	A.B. 1948, The George Washington	
Evensta, Alma J.	D.C.	University	D.C.
Evenstle, William Edward	D.C.	Farron, Sally Ann	D.C.
Everding, Charles Jerome	Md.	Farr, Dan Carlos	
Everding, Vincent H.	Va.	A.B. 1949, The George Washington	
Everett, Franklin Milton	D.C.	University	
Everett, Gerald Waddell	Miss.	Farr, Edward Stuart	D.C.
Everett, Mary Helen	Ind.	Farr, Francis Reinsel	Ind.
Everett, Phoebe Ruth	Md.	Farr, James Edward	D.C.
Everett, Robert Jersell	N.M.	Farrington, Thelma Elaine	D.C.
Everhart, Clarence Edward, Jr.	Ohio	Farkas, Arthur Beaver	W.Va.
B.S. 1948, Western Reserve University		Farkas, Thomas Stephen	Pa.
Everly, Janice Marie	D.C.	Farkas, Samuel Ediz	D.C.
Evers, Herbert Joseph	D.C.	Farnelli, Alfred Alexander	Pa.
B.M.E. 1947, Cooper Union		Farnham, Gregory Joseph	N.Y.
Everson, Corn Eva	Ohio	Fark, George	D.C.
A.B. 1928, Ohio University		Fark, Gloria Halpern	N.Y.
A.M. 1946, Ohio State University		A.B. 1947, The George Washington	
Eves, Walter Curtis	Md.	University	
B.S. 1948, University of Pennsylvania		Fark, Stephen Ackley	Conn.
Evinski, Casimir K.	Mich.	Farkhause, Harry James, Jr.	N.J.
Ewald, Arden Anton, Jr.	Tenn.	Farrin, Thomas Lee	Fla.
Ewerhardt, Janet Ladd	D.C.	Fallon, Hilman Oliver	Va.
A.B. 1949, Mary Washington College		Fallon, James Stephen	N.Y.
Ewing, Mary Kennedy	Va.	Falloon, James Hugh, Jr.	Nebr.
Ewton, Merle Clement	Tex.	A.B. 1948, The George Washington	
Exten, Gerald Maurice	D.C.	University	
Eynon, Lee Ellen	Va.	Falvey, Jeremiah Joseph, Jr.	Mass.
Eyster, Marguerite Botts	Va.	Falvey, Thomas Joseph	Ind.
Eyum, Charles Eugene III	N.C.	Famighetti, Anthony Angelo	Va.
A.B. 1949, The Citadel		M.E. 1946, Stevens Institute of	
		Technology	Md.
F		Famous, Priscilla	N.Y.
Fass, Robert Temple	Md.	Famulatte, Julius Anthony	Mass.
B.S.E. 1948, Princeton University		Faneck, Elizabeth Marsh	
Faber, Raymond Charles	N.Y.	A.B. 1942, Wellesley College	
B.B.A. 1945, College of the City of		A.M. 1947, University of Chicago	N.Y.
New York		Fanelli, George Marion, Jr.	N.J.
Fabi, Mario Nestor	Pa.	Fanget, Louis Alfred	
Facey, Robert Joseph	D.C.	A.B. 1949, Rutgers University	Pa.
Facinioli, Frank J.	W.Va.	Fannan, Helen Ruth	Md.
B.S. 1946, West Virginia Institute		Fantom, Herman Theodore, Jr.	Va.
of Technology		Farago, Kathleen Karpati	D.C.
Fackler, Walter David	D.C.	Farber, Viola Anna	D.C.
Fadeley, Jane McNeal	D.C.	Farinacci, Andrew Reed	N.Y.
Fadely, Ruth Chesley	Va.	Farkas, Howard	D.C.
Fader, Kenneth Blair	Mass.	Farley, Julia Marie	N.Y.
Fagin, Jack	N.Y.	Farley, Philip John	Va.
B.M.E. 1948, College of the City		Farmer, Dorothy Hughes	Mass.
of New York		Farmer, Francis Xavier	Va.
		Farmer, Robert Singleton	

Farnsworth, Carl Davis	W.Va.	Feaster, Eston Kermit	W.Va.
A.B. 1942, West Virginia University		A.B. 1945, Fairmont State College	
Farnsworth, Carl Jackson	W.Va.	A.M. 1946, West Virginia University	D.C.
A.B. 1936, New River State College		Featherstonhaugh, Arthur Camborne	Puerto Rico
Farquhan, Charles	Md.	Febles, Francisco, Jr.	Va.
Farquharson, Sue Wahle	D.C.	Febrey, Albert William, Jr.	Neb.
Farr, Boyd Joseph	Utah	Federle, Jesse Alan	
Farr, Ralph Dwight	Md.	A.B. 1949, The George Washington	
Farrell, Albert Bernard	D.C.	University	
A.B. 1937, University of Maryland		Federline, Charles Donald	Me.
Farrell, Diane Carolyn	Va.	Fedirko, Natalie	Pa.
Farrell, Edgar Henry, Jr.	N.Y.	Fedirko, Walter	D.C.
Farrell, Helen Lyddane	D.C.	A.B. 1947, Cornell University	Pa.
Farrell, John Joseph	D.C.	Feeley, John Joseph	D.C.
B.S. 1946, University of South		Feenes, Joseph Edward, Jr.	Okla.
Carolina		Feerzel, Richard Albert	
Farrell, Katherine Louise	D.C.	B.S. 1948, Western Reserve University	D.C.
Farrally, Thomas Francis	Md.	Fegan, John Robert	D.C.
Farris, Frederick Joseph	Va.	Feinhold, Lesh Levine	D.C.
Farris, Raymond	N.C.	Fessner, John E., Jr.	N.Y.
Farrow, Robert Lucas	Ohio	Fest, Terry Sandra	N.Y.
B.S. 1948, John Carroll University		Fels, George Henry	D.C.
Farthing, Eunice C.	D.C.	Feldman, Elizabeth Pitblado	Pa.
Farwell, Natalie Anna	N.J.	Feldman, Martha	
Fary, Thomas Franklin	Va.	B.S. 1947, University of Georgia	D.C.
Fassberg, Benjamin	Va.	Feldman, Melvin Martin	D.C.
Fassett, Ellen Longfellow	D.C.	Feldman, Sylvia Dollie	R.I.
Fast, Rita Sandra	N.J.	Felcetti, Dominic	D.C.
Faubion, Urban Hart	Tex.	Felker, Daniel Burke, Jr.	
B.S. in E.E. 1948, University of		B.B.A. 1948, Emory University	Va.
Texas		Fell, Edward Louis	D.C.
Faulcner, John Reynolds, Jr.	Md.	Fellenbaum, Charles Martin	N.Y.
Faulds, Margaret Anne	D.C.	Feller, Ralph Miles	N.I.
Fawley, Willeen	W.Va.	Fellers, Raymond David	D.C.
Faulkner, Charles Edward	Md.	Fello, Joseph Amle	Va.
A.B. 1949, Bridgewater College		Fellows, Keith Harrison	Va.
Faulkner, Josephine Brock	D.C.	Feltman, David Brown	Va.
Faulkner, Richard Fulton	Va.	Feltman, Robert Forsee	
Faunce, Margaret Ann	D.C.	A.B. 1949, The George Washington	
Fauntleroy, William Dillard	D.C.	University	Neb.
Fausel, Walter Lucene	N.J.	Fender, Ross Calvin	Va.
B.S. 1929, Pennsylvania State College		Fenschell, Melvin Medford	
LL.B. 1948, Washington and Lee		A.B. 1947, Dartmouth College	Mont.
University		Fenn, Geraldine Geomana	
LL.M. 1949, The George Washington		B.S. 1944, South Dakota State College	Pa.
University		Fennell, Grover Cleveland, Jr.	Va.
Faust, James Emory	D.C.	Fennell, James Francis	D.C.
A.B. 1948, The George Washington		Fennessy, Mark Paul	Va.
University		Fenster, Phyllis Rose	Va.
Faust, Wilma Freebern	D.C.	Fenstermaker, Robert James	Pa.
A.B. 1929, Iowa State Teachers		Fenton, Ann Masemer	Md.
College		Fenton, Elizabeth Faulkner	D.C.
A.M. 1943, University of Florida		Fenton, James Richard	D.C.
Faustman, Donald Milton	Va.	Fenton, Patricia Joanne	Va.
Favarella, Flosie Paul	Pa.	Fentress, Jacqueline Regina	Okla.
Favarella, Samuel Peter	Pa.	Fenwick, Janet H.	N.I.
Favini, Josephine Louise	Pa.	Fenwick, Paul Robert	D.C.
A.B. 1949, Marywood College		Ferero, Edward George	
Fayre, Pierre Andre	Switzerland	Ferguson, Charles Beverly	
Fawley, Edna Jeanne	Va.	A.M. 1949, University of Michigan	D.C.
B.S. 1946, Madison College		Ferguson, Francis Joseph	
Faxon, Glen Shirley	Va.	B.S. 1946, LL.B. 1949, Georgetown	N.C.
Fay, Agnes Winifred	N.Y.	University	
Fay, Eleanor Therese	Pa.	Ferguson, Isabel	
Fay, Elmer Royal, Jr.	D.C.	A.B. 1925, Agnes Scott College	Va.
Fegan, Eugene Riley	Va.	A.M. 1927, University of Chicago	
Fealy, Jack	Ala.	Ferguson, Katherine McAllister	Pa.
B.S. 1947, Birmingham Southern		A.B. 1948, Ohio University	Va.
College		Ferguson, William Dean	
Fealy, John Marvin	D.C.	Ferguson, William Holmes	Va.
Fearnow, John Tyler	W.Va.	B.S. 1949, University of Tulsa	
		Fern, Benjamin Richard	
		A.B. 1943, Queens College	

Fernandez, Carlos Benito	Cuba	Fincher, Julian Alexander	Md.
LL.D. 1943, University of Havana		A.B. 1948, The George Washington University	
Fernbach, Donald Joseph	N.Y.	Findlay, Karen Elizabeth	Pa.
A.B. 1948, Tusculum College		Finder, Ellen May	N.Y.
Ferree, Itha Henrietta	Pa.	Fine, Bernard M.	Mass.
Ferrell, Barbara Ann	D.C.	Fine, Sidney Albert	N.Y.
Ferrell, Robert Bennett	Ga.	B.S. 1936, M.S. 1941, College of the City of New York	
Ferretti, Angelo Thomas	D.C.	Fine, Sydele Ann	D.C.
B.S. 1948, Seton Hall College		Fineblum, Carol Mararoff	D.C.
Ferri, George Peter	N.Y.	Fineblum, Solomon Sidney	Md.
Ferri, Guy	Pa.	Fink, Jules Verne	D.C.
B.S. 1948, Georgetown University		A.B. 1949, The George Washington University	
Ferrill, Dale Ray	Okla.	Fink, Rufus Black	Md.
Ferrill, Grace Cecelia	R.I.	Fink, William Walter, Jr.	N.J.
A.B. 1948, The George Washington University		Finken, John Anthony	Wis.
Ferrin, Jumnus Farley, Jr.	D.C.	B.S. 1947, M.S. 1948, University of Wisconsin	
Ferris, Lucille Grace	Ill.	Finken, Warren Elroy	D.C.
Ferris, Wendell Holmes	Md.	B.S. in M.E. 1948, University of Wisconsin	
Fetterolf, Wallace Kernait	Pa.	Finlay, Helen King	Va.
Feula, James Joseph	N.J.	A.B. 1945, Huntingdon College	
Feusahrens, William Henry	D.C.	A.M. 1947, The George Washington University	
Feyrer, Nancy	N.J.	Finley, Charles Truman	Md.
Fiala, James George	D.C.	Finn, James Carey	Mich.
Fichandler, Zeida Diamond	D.C.	Finn, John Louis	Pa.
A.B. 1945, Cornell University		B.S. 1942, LL.B. 1949, Georgetown University	
Ficken, Rudolph William	Md.	Finn, John William	Conn.
Fiddler, Robert William	N.Y.	Finn, Robert Wilfred	Mass.
B.M.E. 1946, College of the City of New York		Finn, Walter Robert	Va.
Fiddler, Vera M.	D.C.	A.B. 1939, Duke University	
A.B. 1947, Hunter College		M.B.A. 1949, Harvard University	
Fiedler, August Frederick	D.C.	Finnegan, Hugh James	Va.
Field, Constance Robison	Kans.	Finnegan, Thomas Robert	Maine
A.B. 1943, The George Washington University		Finnell, Albert Thomas	Va.
Field, Gerald Alfred	Va.	Finnell, John Hare	W.Va.
Field, John Morris III	Va.	A.B. 1930, West Virginia University	
Field, Milton Mortimer	N.Y.	Finney, Charles Narber	Nebr.
B.S. in E.E. 1948, University of Nebraska		Finstad, Alice Olga	N.D.
Fields, I. Oletha	Tex.	A.B. 1947, Montana State University	
Fields, Mary Lou	Va.	Finstad, Owen Moum	N.D.
Fields, Paul Henry, Jr.	Va.	Finta, Quinn	Va.
Fields, Roland Carmel	N.C.	Fiolek, Jacob Peter	Conn.
Fields, Thomas	D.C.	A.B. 1949, The George Washington University	
Philadelphia, Samuel Joseph	D.C.	Fiorella, Louis Vincent	Conn.
Flando, Silvio Carl	D.C.	A.B. 1941, Wesleyan University	
File, Richard Stewart, Jr.	Fla.	B.S. 1946, Georgetown University	
Files, George Everett	Va.	Firnhaber, Frederick Stephen	D.C.
B.S. 1943, Tufts College	Md.	Fittag, Mildred R.	D.C.
Filipek, Edward Gregory	D.C.	B.S. 1947, University of Maryland	
A.B. 1949, The George Washington University		Firth, Edward Emery	Va.
Filipowicz, Casimir Anthony	N.Y.	Fischel, Paul Emanuel	D.C.
Filippone, Frank Joseph	Md.	Fischer, Harry Carl	D.C.
Filippone, Joseph Stephen	D.C.	A.B. 1949, The George Washington University	
Filler, John Robert	D.C.	Fischer, John Janos	D.C.
Fillner, John Miles	D.C.	LL.D. 1932, University of Szeged, Hungary	
Filsinger, Ruth Isabel	D.C.	Fischer, Noeli Leroy	Md.
Finamore, Ardis Woodall	Md.	Fischer, Jordan	D.C.
Finch, Chester Lee, Jr.	N.D.	Fishman, Morton	Pa.
B.S. 1943, Lehigh University	D.C.	Fishman, Morton William	Va.
Finch, Elizabeth	D.C.	Fish, James Monroe	Va.
A.B. 1930, Furman University		B.S. 1948, College of William and Mary	
Finch, Lowell Edwin	D.C.	Fish, Joanne Margaret	D.C.
Finch, Walter Gilchrist	D.C.	A.B. 1949, The George Washington University	
B.E.E. 1940, Johns Hopkins University			
LL.B. 1948, M.B.A. 1949, Temple University			
LL.M. 1949, The George Washington University			

Fishbein, Lawrence	Md.	Fitzpatrick, William Joseph	Md.
B.S. 1948, Brooklyn College		B.Ch.E. 1939, Cooper Union	Va.
Fishbein, Rita	Md.	Fitzsimmons, Willard Allen	D.C.
Fishbein, Seymour Leonard	N.Y.	Fitzwilliams, Jeannette	
Fisher, Alan Edmund	Pa.	A.B. 1934, Vassar College	Va.
B.S. 1949, Pennsylvania State College		Flack, Chester	
Fisher, Barbara Ann	Va.	A.B. 1949, The George Washington	
Fisher, Carl William	Ohio	University	Va.
Fisher, Dorothy Anne	Va.	Flaherty, Robert Emery	Pa.
A.B. 1949, Mary Washington College		Flaim, Joseph Herman	Vt.
Fisher, Edith Gramling	D.C.	Flanagan, Bernard Lawrence	D.C.
Fisher, George Harrison	Va.	Flanagan, Paul	D.C.
Fisher, Henry Arthur	W.Va.	Flanagan, Wilfred Winsor	
A.B. 1943, West Virginia University		A.B. 1939, University of Chicago	Tex.
Fisher, Henry Estorge	La.	Flanders, Robert Lee	
Fisher, Hubert S.	D.C.	A.B. 1946, The George Washington	
Fisher, Hubert Wayne	Pa.	University	Pa.
Fisher, James Bernard	W.Va.	Flanigan, James Patrick	D.C.
B.S.F. 1936, University of Georgia		Flanagan, John William	
Fisher, James Lloyd	Mich.	A.B. 1949, Gannon College	Ill.
Fisher, James William	S.C.	Flannery, Curtis E.	D.C.
B.S. 1947, University of South		Flannery, Joseph Patrick	D.C.
Carolina		Flax, Louis	
Fisher, Jean Prichard	Va.	B.S. 1943, University of Maryland	D.C.
A.B. 1947, The George Washington		Flax, Miriam Audrey	Mich.
University		Fleischel, Kurt Otto	Pa.
Fisher, John Edward	D.C.	Fleck, Stephen Edward	
Fisher, John Hannus	Md.	B.S. 1939, Thiel College	Del.
L.L.D. 1931, University of Prague,		Fleetwood, George Harlan	Pa.
Czechoslovakia		Flegal, Martin Good	
Fisher, Joseph Henry	Mass.	B.S. 1940, Westchester State Teachers	
Fisher, Joseph Lyman	Va.	College, Pa.	D.C.
B.S. 1945, Bowdoin College		Fleischaker, Albert	
A.M. 1948, Ph.D. 1947, Harvard		B.E.E. 1940, College of the City	
University		of New York	Pa.
Fisher, Margaret Winslow	Va.	Fleisher, Eh	
A.B. 1943, Reed College		B.S. 1949, University of Scranton	D.C.
Fisher, Marilouise	Pa.	Fleisher, Eric Wilfrid	D.C.
A.B. 1946, The George Washington		Fleishman, Irving	D.C.
University		Fleming, Barbara	Ohio
Fisher, Myers Norman	Va.	Fleming, Daniel Mahrt	Ohio
A.B. 1949, College of William and		Fleming, Douglas Riley	Va.
Mary		Fleming, Harold O'Neal	D.C.
Fisher, Robert Edwin	D.C.	Fleming, Lester Leroy	Md.
B.S.E. 1945, University of Michigan		Fleming, Mary Frances	N.C.
Fisher, Thomas Warren	Md.	Fleming, Michael Burton	
Fitch, Charles Thomas	Md.	B.S. 1949, High Point College	Va.
Fitch, Doris Jean	D.C.	Fleming, Robert Tulloss, Jr.	D.C.
Fitch, Harry John	Md.	Fleming, Rosemary Theresa	Calif.
Fitch, Richard Walsh	Conn.	Fleishman, Wilfred Edwin	Va.
A.B. 1933, Amherst College		Fletcher, Bennie Lyle, Jr.	Md.
L.L.B. 1940, Columbia University		Fletcher, Darrell Wade	Md.
Fitch, Stephen Henry	Md.	Fletcher, Ferne	D.C.
B.S. 1949, University of California		Fletcher, Janet Daphne	D.C.
at Los Angeles		Fletcher, Lloyd Lee	Va.
Fitton, Harvey Nelson, Jr.	Va.	Fletcher, Maurice Clinton	Va.
A.B. 1949, The George Washington		Fletcher, Silas	Md.
University		Fletcher, William Clayton	N.Y.
Fitzgerald, David Tarrant	Va.	Flexer, Morton	W.Va.
Fitzgerald, Donald Edward	D.C.	Flick, Paul Luther	
A.B. 1949, The George Washington		A.B. 1950, Shepherd College	Md.
University		Flieger, Howard Wentworth	Md.
Fitzgerald, Jack Phillips	N.C.	Flieger, Kenneth Hugh	Va.
Fitzgerald, Paul Albert	N.Y.	Flinchum, Vivian Woodard	
B.S. 1936, L.L.B. 1938, St. John's		B.S. 1936, Mary Washington College	Ga.
University		Fling, Martha Kathryn	
Fitzhugh, Howard Lee, Jr.	Md.	A.B. 1949, The George Washington	
Fitzpatrick, Daniel Joseph	Mass.	University	D.C.
B.S. 1949, Georgetown University		Fling, Richard Benjamin	W.Va.
Fitzpatrick, Edward James	D.C.	Flinn, Samuel Roy	Va.
Fitzpatrick, George Ruddell	Pa.	Flint, Delbert Harrison	N.Y.
Fitzpatrick, William Joseph	Md.	A.B. 1930, Salem College	
		Flint, Joseph Howard	

Flies, Richard Konrad	Wis.	Forbes, Ann Katherine	D.C.
Flizanes, John	Pa.	B.S. 1949, The George Washington	
Flomenholt, Lorelei Jacobs	Va.	University	Va.
Florance, John Edward	Va.	Forbes, James Dexter	Va.
B.S. 1925, United States Naval		Forbes, John Terence	Md.
Academy		Forcum, James Evans	Va.
Flores, Erminia	Kans.	Ford, Charles Dewey, Jr.	D.C.
Flores, Paul S.	D.C.	Ford, Eugene Francis	Kans.
A.B. 1948, Municipal University,		Ford, Herbert Wilson	R.I.
Wichita		Ford, J. D.	D.C.
Floria, Joseph Angelo	Md.	Ford, John Francis	Pa.
Floryan, Frank P.	Md.	Ford, John Joseph	
Flowers, Carl Vincent	Mich.	A.B. 1949, Catholic University of	
Floyd, Charles Howard	D.C.	America	N.J.
Floyd, John Phillip	Mo.	Ford, John Joseph	W.Va.
Fluric, Eugene Gordon	Md.	Ford, Max Dale	D.C.
Flynn, Alfred Filer, Jr.	D.C.	Ford, Robert Nelson	N.J.
Flynn, Anna Helion	Md.	Ford, Virginia Gilliss	D.C.
B.E.E. 1940, Willimantic Teachers		Fordham, Frank James	N.Y.
College		Foreman, Jack	Va.
Flynn, Joseph John	Ohio	Foreman, Maryann Jeannette	Md.
A.B. 1948, The George Washington		Forestell, James William	D.C.
University		Forgy, William James	Va.
Flynn, Lawrence Brenden	N.Y.	Forman, Edward	
Flynn, Paul Chadwick	Pa.	A.B. 1942, College of the City of	
Flynn, Ruth Camille	Md.	New York	D.C.
Flynn, Thomas Patrick, Jr.	Pa.	Forman, Leonard	
Flyzik, Thomas Stephen	Pa.	B.S. 1940, College of the City of	D.C.
Foelak, Judy Marilyn	N.Y.	New York	
Foeller, Paul Francis	Wis.	Forman, Sidney	D.C.
Foerster, Gertrude Elizabeth	D.C.	A.B. 1941, Brooklyn College	Va.
Foerster, Herbert G.	D.C.	Forrest, Herbert Emerson	
Fogel, Geraldine Frances	D.C.	A.B. 1948, The George Washington	
Folkarelli, Ralph Joseph	Pa.	University	Md.
Foldenauer, Robert Carl	D.C.	Forrest, Otto Norman, Jr.	
Foley, Annette Haworth	Va.	A.B. 1949, Duke University	Conn.
B.S. 1948, Wilson Teachers College		Forrest, Richard Penn	D.C.
Foley, Charlotte Andrews	Va.	Forrester, Robert Dwight	Va.
B.S. 1942, Longwood College		Forry, John Emerson	
Foley, George Vincent	D.C.	B.S. in M.E. 1939, Oklahoma Agri-	
Foley, James Edward	N.Y.	cultural and Mechanical College	Pa.
Foley, James Kieran	N.Y.	Forberg, Francis Chandler	D.C.
Foley, James Simpson	Md.	Forcht, Samuel Irvin, Jr.	Ohio
Foley, Martin Francis	D.C.	Foraman, Billy Baker	
Foley, Michael Edward	D.C.	A.B. 1949, Miami University	Va.
Foley, Thomas Emmett	D.C.	Forster, Eric Bert	Colo.
Foley, William John	Mo.	Forster, Richard DeVere	
B.S. in M.E. 1948, Missouri School		A.B. 1940, Denver University	Md.
of Mines		Forsythe, Frederick Walter, Jr.	D.C.
Foley, William Lloyd, Jr.	D.C.	Fort, Anna Beulah	
Folger, Mabel Doane	Ga.	B.S. 1944, Wilson Teachers College	Tenn.
Follin, John Walker	Va.	Fort, James Frazier	La.
A.B. 1947, Yale University		Fortinberry, George Kellie, Jr.	D.C.
Follman, Arthur Usher	D.C.	Fortunato, Aldo	Va.
Folse, Kenneth Hemke	Fla.	Forward, Myron Hal	Minn.
Folsom, Dee Elwood	Va.	Fosmark, Stephen Douglas	
B.S. 1948, Wilson Teachers College		A.B. 1945, Macalester College	Ind.
Foltz, John Frederick	N.Y.	Foster, Dudley Woodbridge	
Fondren, Evelyn Baird	Va.	B.S. 1949, Purdue University	Ga.
B.S. 1937, Mississippi State Teachers		Foster, Durward Lee	D.C.
College		Foster, George Howard	
Fonseca, Harold Antonio	D.C.	B.S. 1942, United States Naval	
Fontaine, Conrad Archilles	Tex.	Academy	Md.
A.B. 1949, Syracuse University		Foster, James Buck	D.C.
Fontaine, Robert Richard	Md.	Foster, James Patrick	Maine
Foor, Milton Arlo	D.C.	Foster, Joan	D.C.
A.B. 1947, University of Southern		Foster, Lelia White	Va.
California		Foster, Maria Louise	Va.
Foote, Evelyn Patricia	D.C.	Foster, Marion Julian	
Foote, Vernon Stuart, Jr.	Va.	B.S. 1949, University of Virginia	
Footen, Dorothy Virginia	Md.	Foster, Paul Allen	Mich.
		Foster, Robert Middleton	
		A.B. 1934, University of Michigan	

Foster, Rosamond Werner	Del.	Frank, Enid Helen	Mich.
A.B. 1947, Whitman College		Frank, Kitty Blair	D.C.
A.M. 1949, University of Virginia		A.B. 1943, University of Wisconsin	Md.
Foster, Stafford Clark	D.C.	Frank, Richard Harlan	D.C.
B.S. 1948, University of North Carolina		Frank, Robert Berlyman	D.C.
Foster, Sylvia Elizabeth	Maine	A.B. 1940, University of North Carolina	Md.
Fostvedt, Donald Raymond	Mont.	Frank, Robert Roy	D.C.
Fotouhi, Abel Fazl	D.C.	Frank, Rose Magdalene	D.C.
Fouche, James Edwin	Va.	Frank, William Frederick	N.Y.
Foulke, Charles William	Ohio	Frankel, Abraham	
A.B. 1949, Ohio State University		B.S. 1933, Brooklyn College	
Fouttry, Harold Allan	Md.	B.M.E. 1947, Cooper Union	D.C.
A.B. 1948, Glenville State College		Frankel, Josef Hersh	Va.
Fowler, Basil Dolph, Jr.	Va.	Franklin, Jerome Curtis	D.C.
Fowler, Edward Vincent	Md.	Franklin, Jordan	
B.S. 1949, University of Maryland		B.S. 1946, Worcester Polytechnic Institute	
Fowler, George Clinton, Jr.	D.C.	Institute	D.C.
B.S. 1941, Georgetown University		Franklin, Philip Earle	R.I.
Fowler, Jessie Lorraine	D.C.	Franklin, Rufus Matteson	
Fowler, John Wesley	Md.	B.S. 1947, Massachusetts Institute of Technology	D.C.
Fowler, Thomas	D.C.	Franks, Diane	Md.
Fowles, J. Francis, Jr.	Utah	Franks, Mary Sue	Va.
B.S. 1946, University of Idaho		Frantz, Robert Bruce	Germany
LL.B. 1949, University of Utah		Frantz, Felicitas Erna Marie	D.C.
Fox, Calvin	N.Y.	Franzinelli, Mary Virginia	Va.
A.B. 1949, Brooklyn College		Franzman, Carl Walter	Md.
Fox, Dorothy Schwartz	Ohio	Fraser, Donald Brix	Ohio
A.B. 1947, The George Washington University		Fraser, Donald Ross	N.Y.
Fox, Edward Louis	Okla.	Fratkin, Edward	D.C.
Fox, Elaine Maude	D.C.	Fratkin, Rayleona	D.C.
Fox, Inez Mae	D.C.	Frat, Nicholas Diller	D.C.
B.Ed. 1934, Plymouth Teachers College		Frawley, Agnes Ann	D.C.
Fox, Lawrence Aaron	N.Y.	Frazier, Alene McGregor	Va.
A.B. 1944, Clark University		Frazier, Anna Kathryn	
M.S. 1945, Syracuse University		A.B. 1937, Smith College	Pa.
Fox, Margaret Helen	D.C.	Frazier, Jean R.	D.C.
Fox, Robert Claude	D.C.	Frazier, Kenneth Burton	D.C.
Fox, Saul Aaron	N.Y.	Frazier, Lee Venon	Md.
Fox, William Lloyd	Ohio	Frech, Donald	Mass.
A.B. 1943, A.M. 1945, Western Reserve University		Frechtman, Miriam Isenman	
Fox, William Raymond	D.C.	A.B. 1947, The George Washington University	D.C.
Foye, Walter Francis	Mass.	Fredland, Laura	Okla.
Fraber, Joseph Drew	D.C.	Fredricks, Ilet Henry	N.D.
Fralm, Herbert Standish	D.C.	Fredricks, Robert Emmett	
Frailley, Robert Herbert	D.C.	B.S. 1946, United States Naval Academy	D.C.
B.S. 1949, American University		Free, Elise Marie	Va.
Fraker, Walter Vere	Tex.	Freeborn, Marion W.	
Frakes, William Robert	Ill.	B.E. 1945, Plattsburg State Teachers College	D.C.
Frallic, John Eugene	Md.	Freed, Richard Howard	D.C.
Frame, Don P.	Va.	Freedman, Frances Nadler	D.C.
Frampton, James Elsworth	Ind.	Freedman, Loretta	Conn.
France, Sarah Catherine	Va.	Freedman, Samuel Sumner	N.C.
A.B. 1939, University of Missouri		Freedman, William	
Francis, Audrey	D.C.	B.S. in M.E. 1945, Duke University	Ohio
Francis, Clifford Dale	Va.	Freedom, John Gust	
Francis, Ernestine	Tex.	A.B. 1948, Kent State University	Va.
Francis, Lewis Watkins	Va.	Freeman, Aaron Elliott	Ga.
B.S. 1943, University of Missouri		Freeman, Harlan Edwin	Md.
Francis, Milton John	Md.	Freeman, Horatio Putman	
Francis, Rudger Edward	Md.	B.S. 1947, Dickinson College	Va.
Francis Holman, Ernesto	Colombia	Freeman, James Thomas	Mass.
LL.D. 1941, Major College of the Rosary, Bogotá, Colombia		Freeman, Lawrence Dudley	
Frank, Arnold Roy	Md.	B.E.E. 1949, The George Washington University	Va.
A.B. 1923, A.M. 1926, Johns Hopkins University		Freeman, Leon Haggerty	Del.
Frank, Catherine Mary	Conn.	Freeman, Marian Virginia	
A.M. 1949, Georgetown University		B.S. 1948, M.S. 1949, The George Washington University	
Frank, Clay Farrar	Va.		

Freeman, Mary Blanche A.B. 1940, University of North Carolina	N.C.	Friedlander, Harold B.S. 1934, College of the City of New York	D.C.
Freeman, Mary Eleanor A.B. 1948, Hunter College	D.C.	Friedlander, Philip Peyser, Jr. A.M. 1949, The George Washington University	Va. D.C.
Freeman, Rhoda Golden A.B. 1948, Hunter College	N.Y.	Friedman, Alice Rebecca B.S. 1947, Radcliffe College	D.C. Md.
Freeman, Richard Alan A.B. 1949, University of Chicago	Ill.	Friedman, Bessie Friedman, Charlotte Jay	D.C. D.C.
Freeman, Robert Mendel B.E. 1944, College of the City of New York	N.Y.	Friedman, David Benjamin Friedman, Eugene	D.C. D.C.
Freer, Barry Sullivan Frees, Herbert Allan, Jr.	Ohio N.J.	Friedman, Gerald H. Friedman, John R.	D.C. N.Y.
Fresland, Jacob William, Jr. Frendin, Harold Richard	Va. D.C.	Friedman, Joseph Friedman, Leonard S.	N.Y. N.Y.
Frendlin, Julius Norman A.B. 1949, Duke University	Fla.	Friedman, S. 1947, College of the City of New York	N.I. N.I.
Freism, George Patrick B.S.S. 1949, Georgetown University	Va.	Friedman, Mildred Yvette Friedman, Morris	D.C. N.Y.
French, Bruce Alexander French, Carmene Swag	D.C. D.C.	Friedman, Norman B.M.E. 1945, College of the City of New York	Va.
French, Marjorie Grace A.B. 1926, Ohio State University	Va.	Friedman, Salvey B.S. 1935, Long Island University	N.Y.
French, William E. French, William Thomas	D.C. Fla.	Friedman, Sol Friedmann, Edward	Md. Md.
French, Carolyn Frances Frenkel, George L.	D.C. N.Y.	Friedmann, Paul Frederick Friedrich, Helen Elizabeth	D.C. N.Y.
Frerer, Elizabeth Strachan B.B.A. 1942, Tulane University	Va.	Friedrich, Helen Elizabeth A.B. 1948, St. Joseph College	Pa. D.C.
Freeman, Phyllis Langhitt Freeman, Rose Almaraz	D.C. Mass.	Friedmann, Donald William B.S. in Ed. 1947, Indiana State Teachers College, Pa.	Va.
Freeman, Arthur Samuel Fresto, Restituto Trierle	Va. Mass.	Friedman, Samuel E. Fritzsche, Margaret Beverly	D.C. Va.
Friedenberg, Harold William Friedenberg, Maxwell Charles	Wis. Ill.	Fritz, Bernard James Fritz, Charles Walter	N.Y. D.C.
B.S. in E.E. 1948, University of Illinois		Fritz, Sigmund B.S. 1934, Brooklyn College	N.Y.
Freund, Frederick G. LL.B. 1941, Washington College of Law	Va.	Froehch, Kathryn A.B. 1942, Evansville College	Ind.
Freundel, Milton A.B. 1949, The George Washington University	N.Y.	Frohm, Alice Patricia Frost, Frances Marie	D.C. N.J.
Frey, Helen Gladys Frey, Saleem DeWitt	N.Y. D.C.	Frohmelt, Alton Alois Frost, Jack Arthur	1003 D.C.
Freyrick, Arthur Julius B.S. 1941, Muhlenberg College	D.C.	Frost, Laurence Hugh B.S. 1936, United States Naval Academy	D.C.
Friborg, Donald Martin B.B.A. 1948, University of Minnesota	Minn.	Fry, Elmer Charles Fry, Ernest William	Kans. Va.
Frick, Josephine Elizabeth Frick, Warren Allen	D.C. Ill.	Fry, Eugene Nathan A.B. 1949, The George Washington University	D.C.
Fricke, Florence Wilma B.S. in L.S. 1938, University of Minnesota	D.C.	Fry, George Edward Frye, Mildred Louise	D.C. Pa.
Frid, Louis Irvin Friday, Edith Marguerite	Md. Pa.	Frye, Mildred Louise B.S. 1937, University of Pittsburgh	
Fridgen, Katherine Elizabeth Fried, Alfred Sigmund	Minn. Md.		
Fried, Alvin Bartlett Fried, Edward Robert	D.C. N.Y.		
A.B. 1941, University of Michigan			
Fried, Maurice Ph.D. 1948, Purdue University	Md.		
Friedberg, Felix B.S. 1944, University of Denver	D.C.		
Ph.D. 1947, University of California			
Friedberg, Seymour A.B. 1948, New York University	N.J.		
Friedenberg, Ina Ruth Friedlander, Blaine Peyser	D.C. Va.		
A.B. 1948, University of Virginia			

Frye, Theodore Raymond	Ohio	Futoran, Josef	Va
A.B. 1947, Oberlin College		B.S. 1945, M.S. 1936, College of the	
Fryer, Dorothea Constance	D.C.	City of New York	D.C.
Fryer, Norman Ewins, Jr.	Md.	Futrovsky, Charles	
B.S. 1938, United States Naval		B.S. 1942, M.S. 1948, The George	
Academy		Washington University	Md.
Fuchs, Edmund F.	D.C.	Futtermann, Sidney	N.Y.
B.S. 1945, St. John's University		Fuyat, Henry Noel, Jr.	
A.M. 1942, Fordham University		B.S. 1946, Rhode Island State College	
Fuchs, John Edward, Jr.	D.C.		
Fuchs, William Francis	D.C.	G	
Fugate, John Paul	Ohio		
Fugate, Wilbur Lindsay	Va.	Gable, Richard Bennett	S.C.
A.B. 1944, Davidson College		Gable, Robert Barth	Pa.
LL.B. 1947, University of Virginia		Gabletsa, Mary Jane	N.H.
Fulcher, Robert Clinton, Jr.	Md.	A.B. 1947, Wellesley College	Va.
A.B. 1947, The George Washington		Gabriel, Hilde	D.C.
University		Gabrielian, Paruir	Md.
Fulesdy, Charles Andrew	Pa.	Gaegler, Francis Xavier, Jr.	D.C.
Fuller, Charles Edward	N.Y.	Gaertner, Robert Montague	Md.
Fuller, Frank Gardner	R.I.	Gaetano, Anthony	D.C.
B.S. 1939, Aurora College		Gaer, Charles Cotter, Jr.	D.C.
A.M. 1947, The George Washington		Gaglianna, Robert Chester	D.C.
University		Gagnon, Henry, Jr.	Ill.
Fuller, George Tucker	D.C.	Gail, William Albert	
Fuller, James Harlain	D.C.	B.S. in M.E. 1948, University of	
Fuller, Robert Lannes	D.C.	Illinois	Va.
A.B. 1939, Bates College		Gailbreath, Mary Nell	Va.
A.M. 1941, Boston University		Gaines, Robert Wesley, Jr.	D.C.
Fullerton, Gay Williston	Va.	Gaines, William Marvon	D.C.
Fulmer, Donna Marie	Pa.	Ganey, Burtis Allen	D.C.
Fulp, James Douglas, Jr.	S.C.	Galan, Wenceslaw Llegado	N.Y.
B.S. 1944, United States Naval		Galane, Morton Robert	
Academy		B.E.E. 1946, College of the City of	
Fulton, Leroy Edgar	Calif.	New York	Md.
A.B. 1949, The George Washington		Galbreath, William Wilson	
University		A.B. 1939, M.S. in Ed. 1940,	
Funderburk, Charles Wade	S.C.	Pennsylvania State College	D.C.
Funderburk, Ray	Va.	Gale, Guy Harrison, Jr.	Va.
Funger, Morton Irwin	Va.	Gale, Thomas Boyle	
Funk, James Samuel	D.C.	B.S. 1917, United States Naval	
Funk, Richard Hodiges	Kans.	Academy	Md.
Funkhouser, Claude	Va.	Galeano, Charles Joseph	
B.S. in M.E. 1944, University of		B.M.E. 1949, The George Washington	
Maryland		University	D.C.
Funkhouser, Curtis Lee	Va.	Galfond, David Charles	Mass.
Funston, Chester Clifford	Kans.	Galinia, Victor John	
Funt, Tobias	Mo.	LL.B. 1941, Georgetown University	Va.
A.B. 1948, University of Missouri		Gall, John Christian, Jr.	D.C.
Furiga, Peter Lorenzo	Mass.	Gallagher, Barbara Blaine	Va.
B.S. in Ed. 1941, Boston University		Gallagher, Bernard Francis	N.Y.
Furlow, Thomas William	Ark.	Gallagher, James Frederick	Md.
Furlow, William Louis	Minn.	Gallagher, Joan Marietta	D.C.
A.B. 1949, Carleton College		Gallagher, John Joseph	
Furman, Erin Maylay	Va.	Gallagher, Joseph Matthew	
A.B. 1947, University of Texas		B.S. in P.E. 1953, The George	
Furman, Eugene Marvin	D.C.	Washington University	D.C.
Furman, Martha	N.Y.	Gallagher, Leona Pearl	Md.
A.B. 1944, Brooklyn College		Gallagher, Margaret Wagner	D.C.
Furman, Paul Larry	D.C.	Gallagher, William B.	N.I.
Furness, Royal Anthony	Va.	Gallagher, William George	N.Y.
B.S. 1928, Colgate University		Gallant, Arthur	Puerto Rico
Furr, Ruby L.	Tex.	Gallart-Mendia, Rafael	N.M.
Furson, Robert Henry	D.C.	Gallegos, Eleuterio Valdemar	N.M.
Furst, Howard Irving	Calif.	Gallegos, Minerva Victoria	
A.B. 1943, University of California		A.B. 1947, Catholic University of	
at Los Angeles		America	D.C.
Furtado, Laura	Mass.	Galligan, James Francis	N.Y.
Furth, Frederick Raymond	Md.	Gallo, Raphael Edmund	N.C.
B.S. 1924, United States Naval		Galloway, Esther Augustine	Md.
Academy		Gallup, Elizabeth Hale	Md.
M.S. 1932, Yale University		Gallup, Meredith Hale	D.C.
Fusini, Carlo Charles	Mass.	Galper, Robert	

Galuska, Sophie Justine	D.C.	Garner, Earle Whitley	Va.
Galvin, Frances Wright	Va.	Garner, Frances Lewis	Va.
Galvin, William Michael, Jr.	Md.	B.S. 1928, Mary Washington College	
Gamache, John Arthur	Mich.	Garner, Frederick Reed, Jr.	D.C.
Gambel, Seamus	D.C.	Garner, George William	D.C.
Gamble, John Taper	Md.	Garner, Louis Herbert	D.C.
Gambou, Lionel Kenneth	Philippines	Garner, Yancey Holmes	Md.
Gambou, Melquiades Irvine, Jr.	Philippines	Garnett, Carroll Marion	Va.
Gambou, Pearl Grace	Philippines	B.S. 1928, The George Washington University	
Gammersfelder, Howard Earl	D.C.	Garnett, James Harper	D.C.
Ganley, John Leo, Jr.	Va.	A.B. 1947, University of Virginia	
Gannon, Albert William	N.J.	Garrahan, Norman	D.C.
Gannon, Ann Deborah	N.J.	Garren, Edward Burgess	D.C.
A.B. 1942, Antioch College		Garrett, Anthony Matthew, Jr.	D.C.
Gans, Joan Regina	N.J.	Garrett, C. Donald	Va.
Gans, Harold Philip, Jr.	D.C.	B.S. 1951, Franklin and Marshall College	
Gant, Jessie Florence	Ill.	Garrett, Elizabeth Anne	Va.
Gantz, Frank Elwin, Jr.	D.C.	Garrett, Mary Jane	Va.
Gantz, Gertrude Sault	Md.	A.B. 1943, Florida State College for Women	
A.B. 1935, Yankton College		Garrett, Paul Weatherly	D.C.
Gantz, Katherine Gordon	D.C.	A.B. 1949, The George Washington University	
Garbee, Edwin Theodore	Va.	Garrett, Rufus Sanders, Jr.	Tex.
Garber, Bruce Daniel	Md.	B.S. 1946, United States Military Academy	
Garber, Edythe Alyne	D.C.	Garrett, William Donaldson	D.C.
A.B. 1939, The George Washington University		Garris, Fred Lee	D.C.
Garcia, Antonio	D.C.	Garris, Jack J.	Mich.
Garcia, Lee	Tex.	A.B. 1927, University of Michigan	
Garcia, Lupe	N.M.	Garrison, Ellison Cowart	Va.
Garcia, Manuel Gilberto	Ariz.	Garrison, Etzel L.	Md.
A.B. 1947, The George Washington University		Garrison, James Luther	Md.
Gard, John Glennwood	N.C.	Garrison, Lynn Willard	Md.
Gardner, Benjamin Franklin, Jr.	Md.	Garrison, Milton Eldridge	D.C.
A.B. 1943, University of California at Los Angeles	Va.	Garron, Edward Joseph	Nex.
LL.B. 1918, The George Washington University		Gartlan, Charles Gregory	N.J.
Gardner, John Kelsey	D.C.	A.B. 1948, Roanoke College	
Gardner, Marshall Closson	Ind.	Gartner, Robert Martin	D.C.
B.S. 1943, The George Washington University		Gartrell, Archibald, Jr.	Md.
Gardner, Nancy Herndon	D.C.	Garver, Clifford Elliott	S.D.
Gardner, Paul Trygum	Mich.	Garvey, Mary Agnes	D.C.
A.B. 1946, University of Michigan		Garvin, Mildred Barnett	Ill.
Gardner, Richard Harland	D.C.	Garza, Celedonio Marcelino	Va.
Gardner, Sophia Schneider	Va.	Gasda, Bernard Herbert	Pa.
B.S. 1936, New York University		Gaskins, Franklin Jefferson	D.C.
Gardner, Spencer Delos	Mich.	Gaskins, Richard Hancock	D.C.
LL.B. 1949, The George Washington University		Gasque, Martha McKay	D.C.
Gardner, Virginia Mason	Va.	Gass, Charles	D.C.
Gardner, Walter Thomas, Jr.	Va.	Gass, Louis	D.C.
Gareau, Charles Frederick	Va.	Gassaway, Jim Footsue	Okla.
B.S. in M.E. 1939, The George Washington University		A.B. 1940, East Central State College	
Garfinkle, Melvin	D.C.	Gassert, William Joseph	D.C.
Garvano, Fredie Patrick	N.J.	Gassner, Florence Dorothea	Mo.
B.S. 1947, The George Washington University		Gates, Allan Williams	D.C.
Gargus, James Leon	D.C.	Gates, John William	Calif.
Garhart, Bernard Howard	Va.	Gates, Lucille E.	D.C.
B.S. in Ed. 1948, Slippery Rock State Teachers College, Pa.		Gates, Mark Moses	Va.
Garland, Samuel Abraham	Pa.	Gates, Maurita Virginia	Pa.
Garland, William Arthur	Pa.	Gates, Ruth Marie	Va.
Garlock, Edward Allen, Jr.	D.C.	Gates, Walter Samuel	Ky.
B.S. 1943, The George Washington University	Md.	A.B. 1942, Centre College	
Garlock, Robert Austin	N.Y.	Gates, William Baxter	Va.
A.B. 1949, Union College		Gaslin, Daniel Ray	Md.
Garner, Alice Elizabeth	D.C.	B.M.E. 1947, University of Southern California	
		Gatrell, John David	Va.
		Gatten, Lloyd Rex	Va.
		Gattone, Charles, Jr.	D.C.
		A.B. 1950, Shepherd College	
		Gattoni, Joseph Alexander	Mass.

Gau, Wilfred William	Minn.	Gelfand, Sydney Samjesther	D.C.
Gaudet, Richard Austin	Mass.	Geller, Irving	N.J.
B.S. 1947, University of Rochester		A.B. 1949, The George Washington University	
Gauchan, John Vincent	Va.	Gelly, George Vaughan	D.C.
A.B. 1942, Villanova College		Gelly, Margaret Clifford	D.C.
L.L.B. 1949, The George Washington University		Gelman, Herman A.	N.Y.
Gauchat, Vincent Michael	N.Y.	A.B. 1948, Brooklyn College	
Gaus, William Carl	Pa.	Gelson, Samuel Theodore	N.Y.
A.B. 1947, Bucknell University		Gemmell, John Donald	Pa.
Gause, William Charles	Md.	Gemmell, Ronald Harvey	Calif.
Gauss, Arthur	Md.	Gemmell, Thomas Joseph	D.C.
B.S. in F.E. 1933, Drexel Institute of Technology		Gemza, Theodore Anthony	Conn.
Gauthier, Eugene Aldrick	D.C.	Generelly, Richard Fleury	D.C.
Gautier, John Donovan	Miss.	Gentilner, Elmer Hale	Pa.
Gaver, Eva Florence	N.Y.	Gentile, Augustine	Pa.
Gavio, Martin Jerome	N.J.	Gentile, George Marvin	Pa.
A.B. 1949, Norwich University		B.S. 1946, Northwestern University	W.Va.
Gavrisheff, Ellen	D.C.	Gentile, John Joseph	D.C.
A.B. 1944, Our Lady of the Lake College		Gentner, Evelyn Gifford	D.C.
Gaynor, Donald Bernard	Md.	Gentner, Walter Andrew	Pa.
Gearing, Hider Fulford	Md.	Gentry, Lyndwood Paige	D.C.
B.S. 1949, United States Naval Academy		George, Betty Lou	Ohio
Geass, David Wesley	D.C.	George, Harry Clair	
Gebeaux, Ruth Watson	Va.	B.S. 1944, Mount Union College	Va.
A.B. 1948, Greensboro College		George, James Barron	
Gebhardt, Charles Robert	Va.	A.B. 1948, College of William and Mary	
B.S. 1948, United States Naval Academy		George, Joan Marjorie	Mass.
Gechter, Bernard Joseph	Va.	George, Joseph Homer	Va.
A.B. 1948, University of Connecticut		George, Lynn Darcy	Va.
Gednev, Philer Tayloe	D.C.	George, Myra Pittenger	Va.
Gee, Margaret	D.C.	George, Richard Bennett	
Geeslin, Ernest L.	Ga.	A.B. 1949, The George Washington University	
Gelin, Sylvia Yolande	W.Va.	George, Robert B.	Pa.
Geib, Esther Daneshower	Md.	Georgeson, James Demetrios	Venezuela
B.S. 1946, Pennsylvania State Teachers College, West Chester		Georget, Henry Leonard	Va.
Geib, Lester Myron	Md.	Georgewitch, Theodore Alexander	D.C.
Geier, Conrad Schroeder, Jr.	Va.	Georgion, Melton Michel	Pa.
A.B. 1949, The George Washington University		Gephhardt, Thomas Steuber	Mo.
Geir, Frederick Raymond	Ohio	Gerard, Richard	
B.B.A. 1948, University of Toledo		B.S. 1946, Kansas State College	Md.
Geiser, Herbert George	Wis.	Gerber, Henry Leonard	Va.
Geiser, Lucile Mary	Minn.	Gerber, Sara Kathryn	Ohio
Geiser, Molly Ruth	D.C.	Gesche, Albert Bernard	Tex.
A.B. 1948, Vassar College		Gescke, William Beman	
Geisle, Ralph Calvin	D.C.	B.S. 1949, Trinity University	Mich.
A.B. 1948, Shawnehan University		Gerende, Jean Louise	
A.M. 1940, Columbia University		B.S. 1928, Bay City College	
Geis, Lawrence Raymond	Va.	M.S.P.H. 1940, University of Michigan	Mich.
B.S. 1944, United States Naval Academy		Gerend, Lincoln Jennings	Va.
Geiser, Anton	D.C.	Gerhard, Edmund Joseph	Md.
Geiser, Jesse Browning	D.C.	Gerhardt, Robert Bernard	
Geisler, R. Gene	Mo.	B.S. in M.E. 1947, Northwestern University	D.C.
Geist, John Willard	Pa.	Gerhold, William Franklin	Wis.
B.S. 1944, United States Naval Academy		Gerlach, Marilyn Lillie	Ind.
Gekker, Catherine Osann	D.C.	German, John William, Jr.	Mich.
Gekker, Paul	D.C.	B.S. 1944, Rose Polytechnic Institute	
A.B. 1948, A.M. 1949, The George Washington University		German, Josephine Elisabeth	Md.
Gelak, Bernard Andrew	N.Y.	A.B. 1948, University of Michigan	
B.S. in E.E. 1947, Syracuse University		German, Waldo Ross	Va.
Gelb, Joseph Donald	Pa.	Germas, Demosthenes James	D.C.
B.S. 1950, University of Scranton		Gernova, Lola Patricia	D.C.
Gelby, Walter Henry	N.Y.	Gerow, Lee Saunders	
A.B. 1941, New York University		B.S. 1913, Virginia Military Institute	Va.
		Gershaneck, Viola Keeler	D.C.
		Gershenson, Leo Eli	
		B.B.A. 1950, College of the City of New York	Va.
		Gerson, Morris	

Gersten, Aaron Lewis B.S. 1948, University of Connecticut	Conn.	Gieseking, Charles Frederick Gifford, Harold Gene	Va. Neb.
Gersten, Harold	Conn.	Gifford, Yale Wesley A.B. 1948, The George Washington University	Kans.
Gerstenecker, Carol Lorain	Va.	Giglio, William Peter	Md.
Geisch, Betty Lee	D.C.	Gilbert, Elias Ronald	Mo.
Geserick, Harry Clarence	D.C.	Gilbert, Foster Ingram	Va.
Gessow, Orsine David B.Ch.E. 1939, College of the City of New York	Pa.	Gilbert, Fred Stewart, Jr. B.S. 1947, LL.B. 1938, University of Florida	Fla.
M.S. 1945, University of Pennsylvania		LL.M. 1948, The George Washington University	
Getzinger, Norman Wilson A.B. 1941, Harvard University	Mich.	Gilbert, George Milton A.B. 1949, The George Washington University	Fla.
Gettings, Theresa Anne B.S. in Ed. 1941, Worcester State Teachers College	Mass.	Gilbert, Harry Turner, Jr. A.B. 1935, Princeton University	D.C.
Gheseling, William Marvin	Ga.	Gilbert, Humphrey	Va.
Giardi, Mary Catherine B.S. 1941, Northern Michigan College	Mich.	Gilbert, James Bryson	Pa.
Ghosh, Olga A.B. 1948, Indiana University	D.C.	B.S. 1943, Haverford College	
Gianacoli, Margaret Catherine	D.C.	M.D. 1946, Jefferson Medical College	D.C.
Giancaspro, John B.S.S. 1942, College of the City of New York	D.C.	Gilbert, Milton Edwin B.M.E. 1948, College of the City of New York	
A.M. in Ed. 1940 The George Washington University		Gilbert, Nancy	Md.
Giancoli, Mary Ann	D.C.	Gilbert, Stanley Ormand	D.C.
Giangreco, Angelo Andrew	D.C.	Gilchrist, Wayne Richard	Mo.
Giannone, Charles	N.J.	Giles, Henry Ernest	Md.
Giaquinto, Eugene Louis, Jr.	Conn.	A.B. 1927, Washington State College	
Giardina, Flora Maye A.B. 1947, Millsaps College	Miss.	A.M. 1936, Colorado State College of Education	
Gibbons, Florence Katherine	Conn.	Giles, Mary Elizabeth A.B. 1948, The George Washington University	D.C.
Gibbons, Helen Elizabeth	D.C.	Gifford, Leon A.B. 1939, Brooklyn College	N.Y.
Gibbons, Mary Graf A.B. 1940, Allegheny College	N.Y.	Gilham, Nathaniel Richard	Md.
Gibbs, Edward Charles	D.C.	Gilhoth, Peter Alfonso	D.C.
Gibbs, Elizabeth Dill A.B. 1941, East Carolina Teachers College	D.C.	Gill, David Virginia	Md.
Gibbs, John William A.B. 1946, The George Washington University	Va.	Gill, Frank Edward	Iowa
Gibbs, Julian Glenwood, Jr.	D.C.	Gill, Peter Lawrence B.S. 1943, Harvard University	Md.
Gibbs, Ray Allison, Jr.	Va.	Gill, Rowland Pearson A.B. 1946, Louisiana Polytechnic Institute	La.
Gibbs, Robert Stewart	N.Y.	Gillard, William Henry	D.C.
Gibbs, Thomas Edwin	W.Va.	Gilleen, Marjred Elwood	Tex.
Gibney, Edith Cecelia Gibson, Charles Edward M.S. 1945, California Institute of Technology	Pa. Ohio	Gilleland, Mary Elizabeth	Ark.
Gibson, Ervin DeWitt A.B. 1927, Northeastern State College, Okla.	D.C.	Gillen, Hugh Chisholm A.B. 1937, University of Wisconsin	Wis.
Gibson, James Columbus		Gillespie, Constantine John	D.C.
Gibson, James Frederick A.B. 1949, The George Washington University	Tenn. Ill.	Gillespie, Elizabeth R.	Ky.
Gibson, James Wallace B.S. 1941, Hampden-Sydney College	Va.	Gillespie, George John	D.C.
Gibson, John Murray B.S. 1934, Washington and Jefferson College	Md.	Gillespie, Mildred Clara	Va.
Gibson, Paul		Gillespie, Richard James	D.C.
Gibson, Rankin MacDougal LL.B. 1939, University of Missouri	D.C. Mo.	Gillespie, Ruth Joyce B.S. 1948, American University	Tenn.
B.S.L. 1948, St. Paul College of Law		Gillette, Kirby Marvin A.B. 1931, University of Michigan	D.C.
Gibson, Robert Carl B.S. 1938, Eastern Illinois State College	Va.	LL.B. 1937, Wayne University	
A.M. 1942, University of Illinois		Gillette, Mark Freeman	Iowa
Giese, Edwin James	Ill.	Gillette, Nadine Gray	D.C.
Giese, Raymond Thomas	Kans.	Gillette, Noeth Bolling	Mont.
		Gillette, Warren B.S. 1942, California Institute of Technology	D.C.
		Gilliam, Frank Peter B.M.E. 1937, Catholic University of America	Ill.
		Gilliam, Homer, Jr.	Va.
		Gillis, Harry Arthur, Jr. A.B. 1942, Ohio Wesleyan University	Ohio

Gillis, Margaret Christine	Maine	Gleason, Marguerite Ann	D.C.
Gillman, Robert David	D.C.	Glenn, Charles Hubert, Jr.	Me.
A.B. 1939, B.Mus. 1940, Yale University		Glenn, Gertrude Marion	N.J.
A.M. 1946, Columbia University		B.S. 1942, New Jersey State Teachers College, Trenton	
Gills, James Wellington	W.Va.	Glenn, John Ralston	Pa.
Gills, Leha Rose	D.C.	Glenn, Leo Clarence	Ill.
Gills, Louis Catlin	Va.	Glenn, Lucille Wright	Va.
Gilman, Charles Sherrill	Va.	Glenn, Ralph Ray	N.C.
B.S. 1940, University of Pittsburgh		A.B. 1946, University of North Carolina	
M.S. 1941, D.Sc. 1949, Massachusetts Institute of Technology		Glenn, Rosemary	N.J.
Gilman, Donald Lawrence	Mass.	Gletler, Bernard Urban	Me.
Gilmartin, Francis Edward, Jr.	N.Y.	Glew, William Bainbridge	D.C.
Gilmore, Edward Lee	W.Va.	Glickman, Louis	N.J.
A.B. 1949, West Virginia University		Glickman, Walter	D.C.
Gilmore, Frank Peter	Ill.	Glinicki, Florence Cecelia	Me.
B.S. 1927, M.D. 1929, Loyola University		Glickler, Annabel	Me.
LL.B. 1949, The George Washington University		B.A. 1948, Western Maryland College	D.C.
Gilmore, William Earl	N.J.	Glorioso, Anthony Robert	Va.
Gilmour, Robert Andrew	Conn.	Glover, Donald Jackson	
Gilpin, John Henry	Md.	B.S. 1949, The George Washington University	
Gilroy, Francis Xavier	N.Y.	Glovinsky, Sam	D.C.
Gilroy, Lillian Rebecca	Ala.	Glowacki, John Henry	Pa.
Gilstrap, William James	Ill.	B.S. 1948, Bucknell University	
A.B. 1940, University of Kansas		Glowacki, Peter	
Gimbel, Ruth Doris	D.C.	B.S. 1947, Bucknell University	D.C.
Gimble, Abraham Isaac	D.C.	Gloyd, Mary Caroline	Ohio
B.S. 1941, M.S. 1948, The George Washington University		Gluck, Henry	
Gimble, Gilbert	D.C.	A.B. 1947, Harvard University	D.C.
Ginsburg, Alan Solomon	N.Y.	Glushakow, Miriam Novakov	Mass.
Gingell, Robert Arthur	Md.	Glynn, Ernest Belter	Ind.
A.B. 1948, The George Washington University		Gnam, James Henry	Calif.
Ginsberg, Albert	N.Y.	Gnatt, Philip M.	Conn.
Ginsberg, David Kellner	D.C.	Gochberg, Lawrence	Va.
Ginsberg, William Kellner	D.C.	Gochmour, Marion Quee	Va.
Ginsburg, Harry	Md.	Gochmour, Ray Francis	D.C.
Ginsburg, Manny	D.C.	Gocke, Thomas Lewis	D.C.
Ginsburg, Naomi Ruth	D.C.	Goda, Shirley Grace	D.C.
Giraldi, Almerigo	D.C.	Godbey, Gloria Swenson	
Girardi, Gloria Evelyn	D.C.	A.B. 1949, The George Washington University	
B.S. 1944, Wilson Teachers College		Godbey, Leon, Jr.	D.C.
Giroux, Estelle Eva-Pearl	Mass.	Goddard, Chester Lee	Ohio
Girton, Dale Rhoads	D.C.	Goddard, Donald Sidney	D.C.
Giser, Harold Walter	Va.	A.B. 1947, Wilson Teachers College	
Gittelman, Elinor Ann	N.J.	Goddard, William	
Gittinger, Hugh Victor, Jr.	Md.	B.S. 1949, College of the City of New York	Belgium
Gittings, Thomas Morton, Jr.	Md.	Godeaux, Jean Clement	Belgium
Giusti, Natalie	Mass.	LL.D. 1944, University of Louvain	Alaska
Given, Charles Elmer	Kans.	Goding, Maurice Wilfred	
Givort, Martin Lionel	D.C.	A.B. 1911, Yankton College	Va.
Gjupanovic, Fran	D.C.	Godley, Gladys Grandy	
LL.D. 1922, Zagreb University, Yugoslavia		B.S. 1942, Radford College	Ind.
Glaser, Marvin	D.C.	Godwin, Margaret Eaton	D.C.
Glaser, Stanley	N.Y.	Goemaat, Edward John	Iowa
Glasgow, Richard Ellsworth	D.C.	Goesser, Joseph Nicholas	Va.
A.B. 1948, Bradley University		Goetz, Charles Major	Mass.
Glass, Norman Filmer	D.C.	Goewey, Bruce Anderson	
A.B. 1937, LL.B. 1941, Oklahoma City University		A.B. 1942, Colgate University	D.C.
Glassberg, Lee	D.C.	Goffe, Janis Elizabeth	Va.
Glassman, Gerald John	N.J.	Goforth, George Tuttle	N.J.
Glatstein, Irwin Lee	D.C.	Gowlin, Henry Waldo	Me.
B.S. 1939, M.A. 1940, University of Missouri		Gohn, George Milton	Ind.
Glazer, Harry Bernard	D.C.	Gold, Frieda Yetta	
Gleason, Donald Hastings	D.C.	A.B. 1941, Indiana University	D.C.
Gleason, Frederick James, Jr.	D.C.	Goldbaum, Annette Davis	D.C.
Gleason, Georgette Elizabeth	N.Y.	Goldbaum, Leo Robert	
		B.S. 1934, Brooklyn College	
		M.S. 1938, New York University	

Goldberg, Aaron	N.Y.	Goldstein, Sidney Emanuel	Md.
A.B. 1939, Brooklyn College		Goldstein, John F., Jr.	Tex.
Goldberg, Bernard	D.C.	Golin, Gerald	D.C.
Goldberg, Charles Hubert	D.C.	Golin, Joseph Francis	D.C.
Goldberg, Fred	N.J.	Golichay, Grace Marie	Ill.
Goldberg, Irving	N.J.	Golovin, Nicholas E.	D.C.
A.B. 1948, The George Washington University		A.B. 1944, A.M. 1956, Columbia University	
Goldberg, Jack	D.C.	Golovin, Theresa Paula	Md.
Goldberg, Jerome Gershon	Pa.	Goltz, Bernard Kenneth	N.Y.
Goldberg, Marvin Irwin	D.C.	B.S. 1941, M.S. in Ed. 1942, College of the City of New York	
Goldberg, Murray David	Md.	Gomersall, Gwenneth Mary	D.C.
B.S. 1949, University of Maryland		Gomez, Geraldine Rose	D.C.
Goldberg, Seymour	D.C.	Gomez-Dudier, Rafael M.	Puerto Rico
Goldberg, Solomon Charles	D.C.	Gonda, Helen Suzanne	Pa.
A.B. 1948, University of Virginia		Gonsker, Betty	Ind.
Goldblatt, Hyman	D.C.	A.B. 1948, Manchester College	
Golden, John Richard	D.C.	Gooch, Penny Ray	Va.
Golden, Julian Edwin	D.C.	B.S. 1949, Catholic University of America	
Goldenberg, Jacqueline Rose	D.C.	Good, Elizabeth Sarah	Md.
Goldenberg, Jerome Albert	Va.	Good, Gloria Juanita	Va.
Goldenberg, Melvin Myron	D.C.	Good, Norman, Leese	D.C.
B.M.E. 1949, Catholic University of America		Good, William Hersley	D.C.
Goldenberg, Pearl	D.C.	Goske, William Ely	Mass.
Goldenberg, Solomon Alcono	D.C.	Gooding, Arthur Raymond, Jr.	Va.
Godental, Edwin Ira	D.C.	Goodman, Clifford James	Ariz.
Golder, Jacob Victor	D.C.	B.S. 1947, The George Washington University	
A.B. 1939, A.M. 1940, Boston University		Goodman, Leonard Irwin	Va.
Goldfarb, Louise Marilyn	D.C.	Goodman, Marie Fleckner	D.C.
Goldman, Albert L.	N.Y.	A.B. 1945, College of Notre Dame of Maryland	
Goldman, Alfred Merton	D.C.	B.S.L.S. 1947, Western Reserve University	
Goldman, Gerald Jack	Va.	Goodman, Sanford Gerald	N.Y.
Goldman, Harry	D.C.	Goodman, Thomas A.	D.C.
Goldman, Harry	D.C.	B.S. 1947, New York State College for Teachers, Buffalo	
Goldman, Richard Graybell	D.C.	A.M. 1949, Columbia University	
B.S. 1948, Massachusetts Institute of Technology		Goodnight, Lyman Evans, Jr.	Md.
Goldman, Samuel Zachary	D.C.	Goodrich, Bernard Arthur	D.C.
A.B. 1949, The George Washington University		Goodrich, Edward Laros	Calif.
Goldman, Sherman H.	Mass.	Goodrich, Nina Mae	Va.
B.S. in M.E. 1948, Northeastern University		B.S. 1946, Madison College	
Goldman, Thomas Adler	D.C.	Goodrich, Ray Wilkes, Jr.	N.C.
A.B. 1949, Harvard University		B.S. 1948, University of North Carolina	
Goldsand, Ronald Howard	N.Y.	Goodsaid, Alan	Md.
Goldsbrough, George Joseph, Jr.	Md.	Goodsaid, George Herman	D.C.
B.S. 1947, United States Military Academy		Goodwin, Jack Warren	D.C.
Goldsmith, Betsey	N.J.	B.S.E.E. 1947, Tri-State College	
Goldsmith, Marcia Wolf	D.C.	Goodwin, Joseph Daniel	D.C.
Goldsmith, Theodore Harold	D.C.	Goodwin, Paul Russell	Va.
Goldstein, Benjamin	D.C.	B.S. 1941, University of Maine	
B.S.S. 1941, M.B.A. 1952, College of the City of New York		Goodwin, Robert Joseph	Calif.
Goldstein, Daniel	Md.	A.B. 1949, The George Washington University	
B.S. 1948, University of Baltimore		Goold, Louise Stewart	D.C.
Goldstein, David Carl	N.Y.	University	
B.S. 1949, New York University		Gooch, Walter Erwin	D.C.
Goldstein, Esther	D.C.	Goranson, Rolf Fabian	Wash.
Goldstein, Howard Samuel	N.Y.	B.S. in A.E. 1940, University of Washington	
B.S. 1948, Roanoke College		Gray, Stanley Joseph	N.Y.
Goldstein, Jack Mark	D.C.	Gordon, Albert	Va.
Goldstein, Jerome Stanley	Md.	B.M.E. 1944, College of the City of New York	
Goldstein, June Ruth	D.C.	Gordon, Alexander Rola	D.C.
Goldstein, Leon George	N.J.	Gordon, Alexander Wayne, Jr.	Pa.
A.B. 1946, A.M. 1949, University of Pennsylvania		A.B. 1940, Allegheny College	
Goldstein, Lloyd Melvin	D.C.	Gordon, Andrew Fraser	N.Y.
D.D.S. 1947, Georgetown University		Gordon, Arlene	D.C.
Goldstein, Raymond Norman	D.C.		
Goldstein, Robert Bernard	N.Y.		

Gordon, Charlotte Ann	D.C.	Gottlieb, Marvin Irving	N.Y.
Gordon, David Huch	Va.	A.B. 1947, New York University	
Gordon, Eva Elaine	Va.	M.S. 1949, The George Washington	
Gordon, Forest	D.C.	University	
Gordon, Francis Guthrie, Jr.	Va.	Gottsch, Marie Helene	D.C.
Gordon, Fulton Ray, Jr.	D.C.	Gottshall, William Holt	D.C.
Gordon, Gladys Bradley	Miss.	A.B. 1948, Allegheny College	D.C.
A.B. 1948, University of Mississippi		Gouge, Susan Cornelia	D.C.
Gordon, Harold	D.C.	B.S. 1948, The George Washington	
Gordon, Harold Raymond	Conn.	University	
B.S. 1948, Teachers College of		Gould, George Marvin	MJ.
Connecticut		Gould, Stanley Benton	Md.
Gordon, Herbert Stephan	Ind.	B.S. 1949, Haverford College	D.C.
A.B. 1947, Indiana University		Gould, Warren	Pa.
Gordon, Howard Leo	D.C.	Goulden, Herbert Edward	Md.
B.S. 1948, Georgetown University		Goulden, Paul Vincent	
Gordon, James Kirke	Va.	B.S. in Ed. 1936, Mount St. Mary's	
A.B. 1949, The George Washington		College	Ill.
University		Gourley, Evelyn Mae	
Gordon, Lester Howard	Mass.	M.B.A. 1948, University of Denver	
Gordon, Mary Jo	N.Y.	Ed.B., Illinois State Normal University	Pa.
Gordon, Robert Norman	D.C.	Gourley, Roy George	
A.B. 1948, University of Buffalo		B.S. 1948, University of Alabama	Pa.
Gordon, Ruby Nell	Tenn.	Govan, Colin M.	Mich.
Gordon, Thomas Cooper	Va.	Govan, Francis Anthony	Ill.
A.B. 1949, The George Washington		Grahner, Herbert Samuel	D.C.
University		Grabowski, Alice June	Ill.
Gordon, Wayne, Jr.	Pa.	Grabowski, Edwin F.	
A.B. 1949, Allegheny College		A.B. 1947, The George Washington	
Gordon, Woodrow Wilson	Va.	University	R.I.
A.B. 1945, Randolph-Macon College		Grady, Joseph William	D.C.
Gore, John William	W.Va.	Grady, Marcia Anne	D.C.
A.B. 1947, Shepherd College		Grady, Thomas Burton	D.C.
Gore, Mary Augusta	D.C.	Graef, Dorothy A.	N.Y.
Gore, Thomas Jackson, Jr.	Va.	Graf, Alfred Geza	Pa.
Gore, William Frederick	D.C.	Graf, Wendell Eugene	Pa.
Goren, Howard J.	Md.	Grahus, Melba Aenes	
Goretzka, Edward Cloman	Pa.	B.S. 1942, Temple University	
B.S. 1948, Muhlenberg College		M.S. 1948, University of Maryland	D.C.
Gorham, Frank Cornelius	Va.	Graham, Philip Arthur	Va.
Gorham, Pauline Callender	Va.	Graham, Champster	Pa.
B.S. 1927, Madison College		Graham, Edward Regis	
Gorman, Pauline Callender		B.S. in Ed. 1941, California State	
Gorman, Frank John	Ohio	Teachers College, Pa.	Fla.
Ph.B. 1943, John Carroll University		Graham, Herbert McCarty	Va.
LL.B. 1946, Western Reserve		Graham, Sylvia Malcolm	
University		A.B. 1947, Randolph-Macon Woman's	
Gorman, Robert Elmer	Md.	College	D.C.
Gorman, Thomas A., Jr.	Va.	Graham, William Griffith	
Gorman, Thomas Richard	Ill.	B.S. 1946, United States Naval	
A.B. 1949, University of Notre Dame		Academy	Va.
Gorman, Vincent A.	N.Y.	Graham, William Montrose	
LL.B. 1948, St. John's University		A.B. 1940, University of Virginia	Va.
New York		Graun, Richard Joseph	D.C.
Gormley, Robert Joseph	N.Y.	Granger, Ann	N.Y.
A.B. 1947, Michigan State College		Grainick, Paul Philip	
Gorrell, Richard Lee	Va.	A.B. 1939, Brooklyn College	Ill.
Gorrie, Jack Osborne, Jr.	N.J.	Gramann, Robert George	Ind.
Gorin, Gerald Malvin	N.Y.	Grams, Ralph Richard	Ala.
Gorschman, Marilyn	N.J.	Granberry, William Alquin	
Gorski, Regina Stella	Va.	B.I.E. 1949, Georgia Institute of	
Gosho, Henry Hiroharu	D.C.	Technology	W.Va.
Goshorn, Alfred Franklin	W.Va.	Grandstaff, Alma Fern	D.C.
Goshorn, Gustava Mabel	Md.	A.B. 1948, Shepherd College	N.J.
Gosnell, Arthur Lewis	Mo.	Granger, Louis Robert	Va.
Gossage, Wade Lionel		Granger, Patricia Laura	D.C.
A.B. 1940, William Jewell College		Grano, Mario	N.Y.
Gotobed, Kenneth Samuel	Nebr.	Grant, Blaine Dodds	N.J.
Gotschall, Gale Parkison	Nebr.	Grant, Leonard J.	Md.
LL.B. 1941, Washington College of Law		Grant, Mary Fair	D.C.
A.B. 1949, The George Washington		Grant, Orland Wolcott	
University		Grant, Ralph Gilbert	
Gottesman, Alexander Morey	Va.		

Grantham, Emery Arden B.S. 1937, United States Naval Academy M.S. 1941, Massachusetts Institute of Technology	Tex.	Green, Harold Arnold Green, Harold Headly, Jr. B.S. in E.E. 1947, B.N. S.T. 1947, Purdue University	D.C. Ohio
Grantham, Rodney Elliott B.S. in E.E. 1942, Purdue University	Md.	Green, Harry Brown Green, Hugh Harrison Green, Jack Allen	Va. Va. D.C.
Granville, John Matthew B.S. 1942, Cornell University	Md.	Green, James Charles Green, Jess Downing, Jr.	Va. Va.
Grasser, Emil Ernst, Jr. Grassmeyer, Georgia Anne Grasso, Michael	Pa. N.J.	A.B. 1944, University of Kansas City Green, John Clarence Green, Mabel Herman	Va. N.Y.
Gratchow, Virginia Louise Grater, Oscar Haskell Gravman, Fanny Ruth Gravmann, Teresa Ann	Md. D.C. N.Y.	Green, Margaret Stetler A.B. 1939, Radford College Green, Mary Nancy	Va. Va.
Gravatte, Robert Howerton, Jr. A.B. 1941, L.L.B. 1947, University of Virginia	Md. D.C.	A.B. 1945, Agnes Scott College Green, Norman Green, Patrick	N.Y. Md.
Graves, Doris Marcella Graves, John Robert Graves, Joseph Basil Graves, Theodore Keith Graves, Walter Albert	Md. D.C. D.C. D.C.	B.S. in M.E. 1948, Lehigh University Green, Priscilla Thayer Green, Robert A. A.B. 1942, Clark University B.S.E. 1948, University of Michigan	D.C. Mass.
Graves, William Keith A.B. 1941, A.M. 1942, Syracuse University	Iowa D.C.	Green, Robert Henry Green, Robert William Green, Samuel	Md. Va. D.C.
Gravite, Dwight Lee A.B. 1948, The George Washington University	Va.	A.B. 1948, George Washington University Green, Stanley Spratt Green, Stanley Keith Green, William Arthur	Va. Calif. D.C.
Gravitz, Melvin A. Grav, Beatrice Mason A.B. 1922, University of Michigan	D.C. D.C.	Green, William Oliver, Jr. A.B. 1946, The George Washington University	D.C.
Gray, Bill Lawrence Gray, Daniel William Gray, Frederick Charles, Jr. Gray, George Howard Gray, James Cecil	Kans. Mass. Ariz. D.C. D.C.	Greenbaum, Hilda Joan Greenberg, Alfred Henry Greenberg, Bernard A.B. 1948, University of Massachusetts Greenberg, Bernard Louis	D.C. D.C. Mass. D.C.
Gray, James Seton, Jr. B.S. 1936, United States Naval Academy	Mich.	A.B. 1941, Oberlin College Greenberg, Benjamin Greenberg, David L.	D.C. Mass.
Gray, John Allan, Jr. B.S. 1949, Pennsylvania State College	N.J.	Greenberg, Lillian A.B. 1946, Brooklyn College Greenberg, Martin Paul	D.C. Md.
Gray, Kenneth Marvin Gray, Lawrence James Gray, Phyllis D. Goswami Smith	Md. Va. D.C.	Greenberg, Milton Jean B.S. 1949, University of Maryland Greenberg, Phyllis Sandra Greenberg, Sidney	D.C. D.C.
Gray, Robert John Gratwohl, John Olin B.S. 1944, College of Puget Sound	N.J. Wash.	B.S. 1948, University of Massachusetts Greene, Alexander Jacques B.S. 1947, College of the City of New York	Mass. D.C.
Gravson, Howard Avery Gravson, Sybil Doris Gravter, Vernon Elmer Greaves, Keith Carpenter	D.C. Va. D.C.	B.S. 1941, University of Idaho Greco, Jacqueline Pauline B.S. 1945, St. Joseph's College, Md.	Idaho
Greco, Mary Annunziata Greeley, Lillie Lee Green, Allen Jones	Pa. Tex. Md.	Greene, Carrie Lee Greene, David F. Greene, Edward Allen Greene, Edward Hakman	N.Y. D.C. La.
Green, Ann Jeanette B.S. 1945, Wilson Teachers College	Va. D.C.	Greene, Harold H. Greene, Jesse Lester Greene, John Derwood	Va. La.
Green, Arleigh William Green, Betty Ma. Millan A.B. 1941, Meredith College	Md. Va.	A.B. 1948, Louisiana Polytechnic Institute A.M. 1941, Louisiana State University Greene, Katherine Virginia	S.C.
Green, Charles Yancey, Jr. Green, Edward Harrison Green, Emil Caldwell Green, Fern	Miss. D.C. S.C. D.C.	A.B. 1947, Eastern Nazarene College A.M. 1948, The George Washington University Greene, Nita Eugenia B.S. 1941, Catholic University of America	Va.
B.S. 1940, Texas Technological College Green, George Hamilton B.S. in Ed. 1949, Temple University	N.J.	Greene, Robert Edward, Jr. B.S. in M.E. 1942, University of Maryland	Md.
Green, Gerald Green, Gloria Esme	Pa. D.C.	Greene, Robert Ellis	Ind.

Greene, Walter Scott III B.S. 1929, Syracuse University	D.C.	Grewal, Rajwant Kaur A.B. 1942, Nagpur University, India	India
Greenfield, Julius William	N.Y.	Grey, James Preston Grad. 190	D.C.
Greenfield, Ralph, Benedict A.B. 1945, University of Chicago	Md.	Grey, William Jackson B.S. 1949, University of Maryland	D.C.
Greenhalge, Frederic Thomas A.B. 1945, Harvard University	N.H.	Grider, John McGavock B.S. 1932, United States Naval Academy	Tenn.
Greenhouse, Samuel W. B.S. 1918, College of the City of New York	N.Y.	M.S. 1941, Harvard University	D.C.
Greenman, Geoffrey David	N.Y.	Griffith, Cecil John, Jr.	Md.
Greenman, Maurice Morton B.S. 1945, Wilson Teachers College	D.C.	Griffith, Lily Hutchison	D.C.
Greenough, William H.	D.C.	Grier, Harold Thomas	Md.
Greenslade, John Willis	D.C.	Griffie, Virginia Walters	D.C.
Greenspan, Louis A.B. 1941, New York State College for Teachers, Albany	N.Y.	Griffin, Churman A.B. 1949, University of North Carolina	D.C.
Greenstein, Paul Samuel	D.C.	Griffin, Faye S.	Va.
Greenville, George Walker	Md.	Griffin, James Edward	Neb.
Greenwald, Charles Smason A.B. 1949, The George Washington University	Tex.	Griffin, Leonard Lee	Va.
Greenwald, Norman David	Mass.	Griffin, Lindon Larkin	D.C.
Greenwald, Robert Frederick	Tex.	Griffin, Mary Kennedy	N.C.
Greenwood, Gayle Marianne	D.C.	Griffin, Thomas William, Jr.	Md.
Greenwood, Nancy Lee	Va.	Griffin, William Earl	D.C.
Greenwood, Russell G.	Md.	Griffin, William Elusha	D.C.
Greenzaid, Judah	D.C.	Griffin, William Joseph	N.Y.
Greer, Irene Elizabeth	Va.	Griffin, Willard Earl	Tenn.
Greer, Reagan Henninger	Tex.	Griffith, Eugene Everett A.B. 1938, The George Washington University	Va.
Greer, Robert Emerson, Jr.	D.C.	A.M. 1938, Columbia University	Va.
Greer, Thomas J., Jr.	Tex.	Griffith, Frederick Phillip, Jr.	W.Va.
Greer, James Calvin	Pa.	Griffith, Richard Darrel	Va.
Gregg, Mary Alice B.S. 1949, University of Wisconsin	Wis.	Griffith, Robert John A.B. 1938, LL.B. 1941, Syracuse University	Tenn.
Gregoric, Florence Irene B.S. 1945, Michigan State College	D.C.	Griffith, Ruby Elizabeth	Canada
Gregory, Betty Gene	Iowa	Griffith, Shirley Ann	Minn.
Gregory, Edward Meeks A.B. 1947, University of Virginia	Va.	Griffith, Thomas John B.S. 1949, Michigan College of Mining and Technology	Pa.
Gregory, Estella H. A.B. 1949, College of Wooster	D.C.	Griffith, William Frederick	Va.
A.M. 1947, The George Washington University		Griffiths, Mary Cecelia	Va.
Gregory, Hugh Elroy	Md.	Griffiths, Joseph Lewis B.S. 1941, Northwestern State College	Ohio
Gregory, Jane Brown B.S. 1941, Pennsylvania State College	D.C.	Griffiths, Muriel Elaine	D.C.
Gregory, Phyllis Jeanne	D.C.	Griss, Robert Dinwiddie III	Ohio
Gregory, Richard Hugh	D.C.	Grimani, Fred Joseph	Va.
Greix, Leslie Max Lashlan B.S. 1945, United States Coast Guard Academy	Ill.	Grimes, John Francis	N.Y.
Greiner, Edwin B.S. 1949, College of the City of New York	N.Y.	Grimes, Robert Henry	N.Y.
Greisman, Jack	D.C.	Grimes, Willard M., Jr. B.S. 1940, Wagner Memorial Lutheran College	N.Y.
Greisman, Sol M.	Md.	Grimm, Robert John	Idaho
Grekila, Richard B. B.S. 1949, Ohio University	Ohio	Grimmett, Talmage Pomeroy	D.C.
Grenadier, Albert Harold A.B. 1949, The George Washington University	Va.	Grimwood, Gordon B. A.B. 1948, The George Washington University	D.C.
Grenan, Marie Margaret	D.C.	Grindle, George Joseph B.S. 1943, LL.B. 1949, Harvard University	Mass.
Grenfell, Elizabeth Magdalena	Md.	Grinnell, John Robert	Colo.
Grenier, Thomas James	Md.	Grisham, Ethel Marguerite	D.C.
Gresser, Seymour Gerald B.S. 1949, University of Maryland	Md.	Grisso, Paul Bennett, Jr. B.S. 1949, Iowa State College of Agriculture and Mechanic Arts	D.C.
Gretzman, Genevieve Mary	Iowa	Gritz, Alexander	D.C.
Greve, Marie Zepin	Nebr.	Gritz, Olga Maria	D.C.
Greville, Thomas Nall Eden A.B. 1930, University of the South A.M. 1933, Ph.D. 1933, University of Michigan	D.C.	Grivas, Spiro James	Va.
		Groah, William Jennings	D.C.
		Grob, Victor Edward	N.J.
		Grobman, William B.S. in E.E. 1944, Rutgers University	N.Y.
		Grodin, Herbert	

Grodsky, James Wilbur B.S. 1943, Georgia Institute of Technology	D.C.	Gulko, Arnold George B.Ch.E. 1947, New York University	Va.
Groenning, Ralph Edward	D.C.	Gump, Lyndon Jay	Md.
Groetman, Theodore Roger	D.C.	Gunn, Frederick Allen	Va.
Grown, John Barry A.B. 1948, The George Washington University	Va.	Gunner, Charles Anthony	N.J.
Gronset, Edith Hana Hagh	Norway	Gunther, Arthur C., Jr.	Ky.
Groom, Carol Celeste A.B. 1948, Municipal University of Wichita	Va.	Gunther, Patricia Ann	D.C.
Groseclose, Louise V. Burras	Va.	Gunther, Robert M.	Minn.
Gross, Donald Lee	Pa.	Gustafson, Harris Finley	Pa.
Gross, John, Jr.	Md.	Gustafson, John Richard, Jr.	Va.
Gross, Robert Victor A.B. 1949, University of Tampa	Pa.	Gustafson, Melbourne A.B. 1948, Augustana College and Theological Seminary	D.C.
Grosse-Lohmann, Ralph	Md.	Guthrie, Upton Keller	Md.
Grove, Jesse Barrett, Jr. B.S. in Ch.E. 1939, Virginia Polytechnic Institute	Va.	Guthrie, David Vetch B.S. 1949, University of Maryland	Md.
Grover, Roy Lee	Md.	Guthrie, Eugene Harding	Mass.
Groves, Gerald Richard	Va.	Guthrie, William Joseph, Jr.	D.C.
Groves, Stanley Corley	D.C.	Gutman, Dalia	Va.
Grubb, Edna Stutler	D.C.	Gutridge, John Everette, Jr.	N.J.
Grubb, Stephen	Nebr.	Gutt, Robert Leonard	Va.
Grubbs, Beryl Louise	Pa.	Guttermann, Harriett	D.C.
Grubbs, Violet Davis	D.C.	Guy, John Philip	Md.
Grubis, Eli A.B. 1939, LL.B. 1939, LL.M. 1948, The George Washington University	Nev.	Guy, Leroy Stanley	Ill.
Grundyke, Richard Nelson	Fla.	Guymon, Roy	D.C.
Gruff, James John	Va.	Gynn, Norman Ray	Ark.
Grumbly, Richard Francis	Va.	Gynn, Theodore Roosevelt	Poland
Grumling, Albert John	D.C.	Gwozdz, Josef LL.B. 1939, Poznan University Magister Juris. 1944, Oxford University England	
Grumberg, Maurice	D.C.	Gwynn, John Alfred	Md.
Grundmann, William Joseph	D.C.	Gwynn, Thomas Summers, Jr. A.M. 1938, University of Maryland	Md.
Grundstein, Nathan David Ph.D. 1943, Syracuse University	Calif.		
Grunfelder, Conrad, Jr.	Md.	H	
Grunsten, Russell Carl	Fla.	Haack, Clifford William	Va.
Grumwald, Norbert L. B.S. 1949, Johns Hopkins University	D.C.	Haack, Joan Irene	Md.
Gruzenzaki, Edward Joseph	D.C.	Haapanen, Ethel Phyllis	Mass.
Gruver, Donald Robert	D.C.	Haas, Andrew Leo B.S. 1919, United States Naval Academy	D.C.
Gruver, Richard Ralph	D.C.	Haas, Dana Marie	Minn.
Gruver, William John B.S. 1938, Pennsylvania State College	Md.	Haas, Edward William A.B. 1936, College of St. Thomas	
Gschwind, Elsie M.	D.C.	Haas, Everett Leo	Md.
Gule, Gilbert	Md.	Haas, Gladys Margaret	D.C.
Gudgen, Royal Wheeler, Jr.	Fla.	Haas, William Irvan	Pa.
Guell, Loren James H.	Wis.	Haase, Herta	D.C.
Guerin, Bernard K. B.S. 1944, Louisiana State University M.S. 1946, The George Washington University	Md.	Haase, Walcott George	Nebr.
Guerra, Serafin Lawrence	Mass.	Huber, Georges A.B. 1942, New York University	D.C.
Guerrero, Manuel Antonio	D.C.	Huberman, David Isadore	D.C.
Guilford, Martha Chapman A.B. 1945, Alabama College	D.C.	Hack, Robert James	Md.
Guimond, Joseph Alexandre A.B. 1931, LL.B. 1933, Western Reserve University	Ohio	Hackman, Lillian Pauline	D.C.
Guinan, Warren Alonzo A.B. 1943, University of Nebraska	Nebr.	Hackney, Charles William, Jr.	N.C.
Guinvan, Ora Jane A.B. 1947, Dickinson College	Pa.	Hackney, Mabel Patricia A.B. 1932, Morehead State College	D.C.
Gulbrandson, Helen Reid A.B. 1938, The George Washington University	D.C.	Hackworth, Gloria	W.Va.
Gulick, Richard Green	Va.	Hackworth, Edward A.B. 1946, The George Washington University	D.C.
		Haddon, Adrie Sylvia A.B. 1949, The George Washington University	
		Haddon, Anna Elisabeth	Maine
		Haddox, Elaine Murray	Va.
		Haddox, Dallas Deryl	Va.
		Hadley, Frank A.B. 1949, New York University	Mass.

Hadley, Harry Irving	Wis.	Hall, Allan	N.J.
B.S. 1930, State College, Superior, Wis.		A.B. 1949, The George Washington University	
A.M. 1940, University of Minnesota		Hall, Charles Llewellyn	Md
Hadley, Herschel Nixon	D.C.	Hall, Daniel Curtis	D.C.
A.B. 1919, Whitman College		Hall, E. Juanita	Ad
Hadlock, Robert Lewis	D.C.	Hall, Ernest Howard	D.C.
Haefl, Richard Alan	D.C.	Hall, Helen Patricia	N.J.
Haeger, Henry	N.Y.	Hall, Iva Merle	W.Va.
B.S. 1948, Georgetown University		Hall, James Aldrich	Va.
Hagan, John Joseph	Conn.	Hall, James Granville, Jr.	Pt.
B.S. 1941, Fordham University		Hall, James Hetrick	D.C.
LL.B. 1949, Georgetown University			
Hagan, Joseph Francis	Va.	A.B. 1947, Baylor University	
Hagan, Theresa Alice	Md.	A.M. 1948, The George Washington University	
Hagan, Thomas Francis	D.C.		Md
Hage, Louis Richard	N.Y.	Hall, James Raymond	D.C.
Hagedorn, Robert Lee	Md.	Hall, Jane Roselle	Iowa
Hageman, Charlotte Suydam	Iowa	Hall, John Edward	Md
A.B. 1926, Vassar College		Hall, John William	
A.M. 1928, Radcliffe College		B.S. 1941, Gettysburg College	D.C.
Hagen, William August, Jr.	Ohio	Hall, Jonathan	
A.B. 1948, Hiram College		A.B. 1935, Rollins College	
Hager, Eileen Mae	D.C.	A.M. 1938, Gallaudet College	D.C.
Hager, Florence Betty	D.C.	Hall, Joseph Alexander, Jr.	W.Va.
Hager, Robert Edwin	Va.	Hall, Joseph Earl	
A.B. 1930, West Virginia University		A.B. 1949, Marshall College	D.C.
Haggart, Jane	D.C.	Hall, Julianne	D.C.
Haggenmaker, Thomas George	Va.	Hall, Lathorn Eugene	D.C.
Haggerty, John Aloysius, Jr.	Va.	Hall, Len Ann	D.C.
Haggerty, Kathryn Stewart	Ohio	Hall, Marshall Carter, Jr.	
Hagle, Alfred Darius	Okla.	A.B. 1941, Williams College	
A.B. in Ed. 1947, Central State College		Hall, Mary Viola	D.C.
Haglund, R. Conrad	Iowa	Hall, Mervin Gatewood	Va.
B.S. 1949, American University		Hall, Nathan Gray	W.Va.
Hagman, Dawn	Mass.	Hall, Patricia Louise	Md
Hahn, Agnes Peacock	Va.	Hall, Robert Jenkins	D.C.
A.B. 1926, College of William and Mary		Hall, Virginia Sybil	Va.
Hahn, Paul Davisson	Va.	Hall, William Henderson	
B.S. 1944, Indiana State Teachers College		Hallberg, Ernest Van, Jr.	
A.M. 1948, The George Washington University		A.B. 1942, University of Florida	N.Y.
Haidt, Harold	N.Y.	Hallert, Bernard	Tenn.
B.S. in Ch.E. 1947, Purdue University		Hallert, Nez Conrad, Jr.	
Haight, Donald James	Va.	A.B. 1949, University of Texas	Md
Hagley, Leo Joseph	Va.	Halley, Frances Jean	Pt.
Haid, Amelia Kalk	Va.	Hallman, Clarence Kenneth	Va.
B.S. 1949, Johns Hopkins University		Hallman, Pauline Pearl	Calif.
Haley, Lyman Griffith	Va.	Hallquist, Norman Jerome	N.Y.
Hair, Margaret Louise	Pa.	Halperin, Murray	N.Y.
B.S. 1947, Mary Washington College		Halperin, Esther	Md
Hair, Maurice Etheredge	S.C.	Halperin, Louis Harrington	N.Y.
Hakim, George John	Lebanon	Halverson, George	Va.
A.B. 1942, A.M. 1944, American University of Beirut		Halverson, LeRoy Thomas	Calif.
LL.D. 1947, St. Joseph University, Beirut		Ham, Mary Sanford	
Halak, Eleanor B.	N.J.	B.S. 1949, Georgia State College for Women	D.C.
Halak, Joseph	Pa.	Ham, Richard Dugby	D.C.
Hale, Roger Curtis	D.C.	Hamann, Charles Waverly	D.C.
LL.D. in Ch.E. 1947, Newton	N.Y.	Hamann, Reuben	Tenn.
Halen, John Thomas	Va.	Hamblen, Dana Harmon	D.C.
A.B. 1949, Brooklyn College		Hamby, Alice Walters	
LL.B. 1949, St. John's College, New York		A.B. 1941, Pennsylvania College	Ky.
Haley, Herbert Otis	Va.	Hamby, John Gordon	
Haley, Louis Allan	Va.	B.S. in M.E. 1947, University of Kentucky	Va.
Hales, Peter John	Va.	Hamilton, Clifford C.	Va.
Hales, Violet Inowry	Va.	Hamilton, Edwin Earl	Va.
Halish, Walter George	Conn.	Hamilton, Grace Anton	N.Y.
A.B. 1947, The George Washington University		Hamilton, Howard Pinner	D.C.
		Hamilton, Jack Robert	D.C.
		Hamilton, Lloyd William	
		A.B. 1948, The George Washington University	Ohio
		Hamilton, Robert Eugene	
		B.S. in E.E. 1948, Ohio University	

Hamilton, Samuel Graham	Mass.	Hanken, Raymond George	Va.
Hamilton, Sabin	D.C.	B.S. 1918, The George Washington University	
Hamler, Dollie Ruby	Iowa	Hankes, Wilbur Ray	D.C.
A.B. 1949, The George Washington University		B.S. in M.E. 1942, Case Institute of Technology	
Hamlin, Alan Holden	Fla.	Hanks, Sarah	D.C.
Hamlin, Emil	Fla.	A.B. 1947, Southwestern Louisiana Institute	
Hammar, Helen Vera	Ill.	Hanley, Charles	N.Y.
B.S. 1949, Illinois Institute of Technology		Hanner, Frank Joseph	N.Y.
Hammastron, Everett John	Mass.	B.S. 1948, New York University	
A.B. 1947, Clark University		A.M. 1949, Columbia University	
Hammel, Berne George	N.J.	Hann, Mary P.	D.C.
Hammer, David Edwin	Ill.	A.B. 1944, College of St. Francis	
A.B. 1949, The George Washington University		Hanna, Jane Edwards	D.C.
Hammer, Thomas Frederick	Ind.	Hanna, William Eugene	Va.
Hammerly, Amelia Diedrich	Va.	A.B. 1947, Branson University	
Hammerston, Frances Suzanne	D.C.	Hammalord, Jerome Bruce	Wash.
Hammersta, Nancy Lane	D.C.	Hanson, John Vincent	N.Y.
A.B. 1948, The George Washington University		Hantush, Raymond Thomas	Mass.
Hammett, Thomas Francis	D.C.	A.B. 1935, Mountmarch College	
Hammon, Francis Raymond, Jr.	N.Y.	Hanrahan, Joseph	N.Y.
A.B. 1948, University of Rochester		Hanrahan, Duane O'Leary	Va.
Hammond, Bette Lea	Pa.	Hansbarger, William Henry	Va.
Hammond, Charles Sterling	Md.	A.B. 1947, University of Maryland	
Hammond, Harry Kjerfve III	Pa.	Hanscom, Marvel Mary	Maine
B.S. 1948, Lehigh University		Hansel, Roger Elmer	D.C.
Hammond, Kenneth Fabian	D.C.	Hansen, Margaret Carolina	D.C.
Hammond, Mary Evelyn Kent	D.C.	Hansen, Martin Edward	Calif.
Hammons, Art Wingfield, Jr.	Miss.	Hansen, Melvin Robert	Nebr.
Hamon, William	Pa.	Hansen, Walter Daniel	D.C.
Hampton, Curren Sidney	Va.	Hansen, Henry Jr.	Conn.
A.B. 1942, Michigan State College		A.B. 1940, Wesleyan University	
Hampton, James Taylor	Mo.	A.M. 1941, Harvard University	
Hampton, Raymond Merritt	Md.	Hanson, Jean Lavonne	Wis.
Hanan, Robert	D.C.	Hanson, Lida Marguerite	Wis.
B.S. 1943, Louisiana State University		Hanson, Murray	Md.
M.D. 1947, Tulane University		B.S. 1944, United States Naval Academy	
Hanbury, Jillian	D.C.	Hanse, Philip Lincoln	Md.
Hanby, Barbara Louise	Md.	Hasek, Andrew	Pa.
A.B. 1948, The George Washington University		Hasek, Joseph	Md.
Hanby, Carolyn Elizabeth	Md.	Hasek, Stephen	Pa.
Hance, Edward	Fla.	Hasek, Richard Jay	N.Y.
B.S. 1946, University of South Carolina		R.M.F. 1948, Syracuse University	
Hanchuk, Madeline Hutchinson	Ohio	Haran, Hilda Gay	Ala.
Hancock, John Harrison	Va.	Harbaugh, George Harold	D.C.
A.B. 1948, Hampden-Sydney College		A.B. 1948, Rutgers University	
Hancock, Katherine I.	Calif.	Harbuck, Martin Price	Ohio
A.B. 1942, University of California		A.B. 1945, University of Toledo	
Hancock, Mary Alyne	Miss.	Harrison, Earle Harrison, Jr.	Mo.
Hancock, Nell	Tenn.	A.B. 1948, Washington University	
Hancock, Quilan Harris	Va.	Hosbald, William Knapp	N.J.
Hart, Elizabeth Plarr	D.C.	Hosson, Richard Fredrick	Ohio
Hart, Mary Elizabeth	N.J.	Hosie, Howard Lee	N.C.
A.B. 1944, Knox College		Hosie, James Blair	D.C.
Handler, Alvin Irving	D.C.	Hosney, Mariam Anne	Iowa
B.S. in Ed. 1939, Syracuse University		Hartin, Albert Norman	Va.
Handley, James Richard	Md.	Hatch, Dale Wayne	Ill.
Handy, Delcie Mae	Va.	A.B. 1949, The George Washington University	
Handy, John Bruce	D.C.	Hardy, John Alice	Va.
A.B. 1943, Washington and Lee University		Hardy, James Ralph	Va.
Hanes, Betty R.	Ohio	Hargrave, William Owen, Jr.	D.C.
Hanes, Eva Mae	Va.	Hanger, Francis Robert	Md.
Hanes, Richard Baldwin	N.C.	A.B. 1948, The George Washington University	
A.B. 1948, Cornell University		Haring, Gilbert Ralph	Va.
Haney, Donald	N.C.	Hartager, Albert Michael	Va.
Haney, Earle, Jr.	D.C.	B.S. 1948, The George Washington University	
Haney, Robert Locke	Calif.	Harlan, John Cooper	Va.
A.B. 1949, University of California		Harlan, Margaret Minerva	Ohio

Harless, Bernard Griffith	Va.	Harris, Martha Jane	D.C.
A.B. 1934, Washington and Lee University		B.S. 1943, University of Pittsburgh	N.C.
Harley, John Key	Ky.	Harris, Mary Louise	D.C.
Harlin, Harriet Ann	Ill.	Harris, Melvin Ray	Okla.
B.S. 1946, University of Illinois		Harris, Paul Austin	
M.S. 1949, Kansas State College of Agriculture and Applied Sciences		A.B. 1949, The George Washington University	Va.
Harloff, William Carroll	Md.	Harris, Raymond Walker	N.Y.
Harlow, Margaret Helen	Minn.	Harris, Robert H.	
A.M. 1941, George Peabody College for Teachers		A.B. 1949, The George Washington University	Iowa
Harmer, Don Stytler	D.C.	Harris, Richard Carl	
Harmon, Alton Ernest	Md.	B.S. 1947, Iowa State College of Agriculture and Mechanic Arts	Va.
B.S. 1936, Oklahoma Agricultural and Mechanical College		Harris, Thomas Gordon	D.C.
Harmon, Clark Thomas	D.C.	B.S. 1949, Lynchburg College	Calif.
Harmon, Marcia Joan	D.C.	Harris, Virgil Hoyle	Va.
Harmon, Richard Prescott	Mass.	Harris, Virgil Erwin	
B.S. 1945, Harvard University		Harris, Virginia Berenice	D.C.
M.S. in Ed. 1947, State Teachers College, Boston		B.S. 1940, University of Virginia	D.C.
Harmon, Robert Brooks	Md.	Harris, William Jewell	N.C.
B.S. 1941, University of Maryland		Harris, William Penn	Calif.
Harmon, Thelma Louise	Maine	Harris, Wilkie Lucille	Md.
Harms, Dorothy May	D.C.	Harrison, Adolph Charles, Jr.	D.C.
B.S. 1949, New York University		Harrison, Alexander	
Harmstone, Richard Channing	D.C.	Harrison, Alexander Aris	Va.
Harnes, John Brooks	Ill.	B.S. 1949, Georgetown University	D.C.
A.B. 1941, Allegheny College		Harrison, Anne Sara	Va.
Harper, Anita Alvera	D.C.	Harrison, Archibald Chapman, Jr.	
A.B. 1945, Syracuse University		Harrison, Barbara Bonell	D.C.
Harper, Bertha Peterson	N.Y.	B.S. 1941, Madison College, Virginia	Va.
A.B. 1936, M.A. 1941, University of Rochester		Harrison, Byron Edward	Md.
Harper, Brandon Neville	Tenn.	Harrison, Eleanor Smith	Va.
Harper, P. Ish Elizabeth	D.C.	Harrison, Elizabeth Toupass	Va.
Harper, Elizabeth Josephine	Mo.	Harrison, Eugene Carter	Va.
Harper, John Alexander, Jr.	Md.	Harrison, George Joseph	D.C.
Harper, Richard Howard	W. Va.	Harrison, Glenn Charles	Va.
Harper, Robert Charles	Md.	Harrison, John Donald	D.C.
Harper, William Rousie	Ky.	Harrison, John Houston	Va.
Harpster, Lyndale Roberta	Md.	A.B. 1949, University of Virginia	N.C.
B.S. 1948, The George Washington University		Harrison, John Millard	Va.
Harrah, Phyllis Anne	Md.	Harrison, Junius Henry	Mass.
Harrigan, John Thomas	N.J.	Harrison, Louis Pincus	
Harrill, Robert Boyce	N.C.	B.S. 1949, The George Washington University	D.C.
Harrington, David Michael	N.J.	Harrison, Mignonette Eulalie	D.C.
Harrington, Elaine Mary	N.Y.	Harrison, Paul Nicholas	Md.
Harrington, Margaret Willard	Va.	Harrison, Raymond William	D.C.
Harris, Anne	Tex.	B.S. 1949, University of Maryland	Pa.
A.B. 1949, Texas College of Arts and Industries		Harrison, Robert Scott	La.
Harris, Anne Overton	Va.	Harrison, Ruth	D.C.
B.S. 1947, Mary Washington College		Harrison, Thelma Winifred	D.C.
Harris, Bertha Florence	D.C.	Harris, Florence Hazel	D.C.
Harris, Catherine	D.C.	Harron, Meyer Jacob	
Harris, Chancellor Elwood	Va.	A.B. 1949, The George Washington University	D.C.
B.S. 1944, University of Kentucky		Harrow, Lee Salem	N.Y.
Harris, Charles Manning, Jr.	Fla.	B.S. 1946, The George Washington University	N.Y.
Harris, Donald Alvan	D.C.	Harrow, Robert Lee	W. Va.
Harris, Doris Lee	Va.	Harriman, Patricia Jo	
A.B. 1937, Concord College		Harshbarger, Sam Ross	Calif.
Harris, Emmett Watkins	Va.	A.B. 1949, West Virginia University	D.C.
Harris, Florine Elizabeth	Va.	Harshman, Glenn Warren	D.C.
B.S. 1939, College of William and Mary		Hart, Anna Marie	Va.
Harris, Forest Claire	D.C.	Hart, Bobby Jack	
B.S. 1949, The George Washington University		Hart, Charles Arvel	W. Va.
Harris, John Samuel, Jr.	D.C.	B.S. 1942, Wake Forest College	Ill.
B.S. 1943, Wilson Teachers College		Hart, Eugenia Ann	D.C.
		Hart, Harold Mathews, Jr.	Ind.
		Hart, Helen Frances	D.C.
		B.S. in Ed. 1910, Boston University	
		Hart, Margaret Dawson	D.C.
		Hart, Nelson Perry	

Hart, Patricia Ann	Okla.	Hattman, Walter David	Md.
Hart, Robert Norton	D.C.	Hauck, William McRae	Ind.
B.S. 1941, Wilson Teachers College		Haur, Irving Maxson	Wash.
A.M. 1947, The George Washington University		A.B. 1938, University of Washington	D.C.
Hart, Seward Lyman	S.D.	Hausan, Gertrude Marian	D.C.
A.B. 1938, Yankton College		Haupt, Charles Caldwell	D.C.
Hart, Stephen Ambrose	Iowa	Hausch, Adolph Paul	N.Y.
B.S. 1941, St. Ambrose College		Hausman, Helen M.	D.C.
L.L.B. 1948, Georgetown University		Hausman, Howard Jay	N.Y.
Hartford, Thomas James, Jr.	D.C.	A.B. 1939, College of the City of New York	
Hartley, Hugh Harris	D.C.	A.M. 1942, New York University	
Hartley, Janet Wilson	D.C.	Hausner, John Burns	D.C.
B.S. 1949, University of Maryland		Hawe, Milton Joseph	Md.
Hartley, Jean Doris	D.C.	B.S. in Ed. 1935, M.S. in Ed. 1940, Rutgers University	
Hartline, Robert Hind	D.C.	Havell, Olga Marie	Va.
Hartman, Bruce Reiff	Va.	Havens, William Dodge, Jr.	D.C.
Hartman, Charles Clifford, Jr.	Calif.	Haver, Doris Audrey	D.C.
Hartman, Harry Edson	Pa.	Hawbaker, Dorothy Jean	Iowa
Hartman, Nona Claire	Calif.	Hawes, Elizabeth	D.C.
Hartmann, Gail Milton	Md.	A.B. 1940, University of North Carolina	
A.B. 1949, University of Chattanooga		Hawes, Russell Llewellyn	Va.
Hartzell, Jay Stanley	Md.	B.S. 1947, M.S. 1948, University of Maryland	
Hartzell, Raymond Howard	Md.	Hawk, Gordon Leigh	Md.
Harvey, Donald Curtiss	R.I.	A.B. 1948, American University	
Harvey, Gertrude Elvira	D.C.	Hawkins, Genevieve Elizabeth	Ga.
A.B. 1927, Waynesburg College		B.S. 1949, Berry College	
Harvey, Harriet Desautels	Wis.	Hawkins, Glenn John	Fla.
B.S. 1948, University of Wisconsin		B.S. in P.H.E. 1947, Georgia Institute of Technology	
Harvey, Herbert Raymond	N.Y.	Hawkins, Herman Edmond	Ga.
Harvey, Luile Virginia	Md.	Hawkins, Herschel Bernese	D.C.
Harvey, Patrick Richard	Iowa	Hawkins, James Henry, Jr.	D.C.
Harvey, Robert Henry	D.C.	Hawkins, Kathryn Mather	Va.
A.B. 1945, The George Washington University		Hawkins, Laura S. Joy	Tex.
Harveson, Helen Jean	Md.	Hawkins, Martha Eleanor	N.Y.
Harwood, Paul Vincent	Mass.	Hawkins, Richard Lyvon	Calif.
Harwood, William Robert, Jr.	Md.	Hawks, Arnold Wayne	Va.
Hashimi, Syed Mohammad Taji	India	Hawn, Elsie G.	D.C.
A.B. 1937, A.M. in Econ. 1939, A.M. in Econ. 1941, Osmania University, India		Haworth, Marjorie Helen	D.C.
Hashman, Lloyd Russell	Ind.	A.B. 1942, M.E.C. College	
B.S. 1946, Indiana University		Hawthorne, Betty June	Fla.
Haske, John Reed	D.C.	Hawthorne, Charles Byrd	Va.
Haskell, Boris	Mass.	B.S. 1949, The George Washington University	
A.B. 1944, Harvard University		Hawthorne, Mary Aurelia	Ohio
Haskell, James K.	Calif.	A.B. 1946, University of North Carolina	
B.S. in Econ. 1949, The George Washington University		Hay, Helen H.	D.C.
Haskins, Elma Hayes	Va.	Hay, Wilbert Dale	Pa.
Haskins, Margaret Varda	Wis.	B.S. 1947, Bucknell University	
Haskins, Guy Rowe	D.C.	Haycraft, Glenn Goodwin	Md.
Haskup, Allen Lee	Fla.	A.B. 1946, The George Washington University	
Hastings, Delores Arlene	D.C.	Hayden, Anne Elizabeth	D.C.
A.B. 1947, The George Washington University		Hayden, James Howard	Md.
Hastings, James Riley	D.C.	Hayden, Louis Charles	Md.
Hastings, Jo Anne Frances	D.C.	Hayden, Mabel Scott	D.C.
Hastings, Theodore Kenneth	Mo.	Hayek, Paul Austin	Mont.
Hastings, William Harold	Del.	Hayek, Will J.	Iowa
Hatch, Albert Hays	Pa.	Hayes, Bernice Anne	Minn.
A.B. 1927, University of Pennsylvania		Hayes, Edward Matthew, Jr.	Maine
L.L.B. 1943, Temple University		Hayes, Edwin William	D.C.
Hatch, Elaine	Utah	Hayes, Joe	Va.
Hatch, Francis Joseph	Md.	Hayes, John Keller	Minn.
Hatch, William Wilson	Ala.	Hayes, Patricia Anne	D.C.
Hatchfield, William Adair	W.Va.	A.B. 1942, College of St. Teresa, Minn.	
A.B. 1947, West Virginia University		Hayes, Robert William	N.Y.
Hattis, Russell Elmer	D.C.	A.B. 1939, Columbia University	
B.S. in E.E. 1947, University of Illinois			
Hattis, Shirley Lois	D.C.		
A.B. 1949, University of Illinois			

Hayler, Robert Ward, Jr. B.S. 1911, United States Naval Academy	Ind.	Heckman, Alexander Irving	D.C.
Hayley, Basil A.B. 1948, The George Washington University	Va.	Heckman, Dorothy Anita A.B. 1949, The George Washington University	N.D.
Haynes, Alton Myles, Jr. A.B. 1949, University of North Carolina	D.C.	Heckman, Francis Austin B.S. 1949, Lebanon Valley College	Pa.
Haynes, Chester St. George	D.C.	Heckman, Grace Catherine A.B. 1947, Maryville College	D.C.
Haynes, Elitieda Grace	Iowa	Hedden, John Osborne A.B. 1948, Drew University	N.J.
Haynes, Frances Gore	D.C.	Hedres, Harold Talmadge	D.C.
Haynes, June Lillian	Va.	Hedres, Richard Henry	Ill.
Haynes, Norma Edith	Va.	Hedley, Robert Kenneth	D.C.
Haynes, Robert Eugene	D.C.	Hedrick, Albert Louis	W.Va.
Haynos, Joseph G.	Va.	Hedrick, Aileen Frances	W.Va.
Hays, Gladys Adee B.S. 1937, University of Tennessee	Tenn.	Hedrick, Betty Mae	W.Va.
Hays, Jesse Roland	D.C.	Hedrick, Robert Kenny	D.C.
Hays, Marion Steele A.B. 1948, University of Arkansas	Ark.	Hedstrom, Axel Bernard	Minn.
Hays, Ralph Emerson, Jr. A.B. 1949, Millsaps College	Miss.	Hedtke, Kenneth Arthur A.B. 1949, University of Minnesota	D.C.
Hays, Richard Leland	Va.	Heeey, Elizabeth Anne A.B. 1949, New Jersey State Teachers College, Upper Montclair	W.Va.
Hays, Woodson Grey	Md.	Helfernan, James Mead	Md.
Hayward, Richard Wright	Md.	Heflin, Edward Lee	D.C.
Hayward, William Gammon, Jr.	D.C.	Heldahl, Gordon Leroy	Id.
Hazelbrook, Raymond Albert George	D.C.	Hegeman, Christine Ruby A.B. 1948, University of Michigan	Mich.
Hazeltine, Virginia Lee	Va.	Heggemann, Rahe Henry	Md.
Hazell, Joseph William, Jr. B.S. 1940, Harvard University	Md.	Hesler, Erasmus Jerome A.B. 1929, Carawba College	Va.
Hazelton, Etta Jo	D.C.	Heglin, Howard James A.B. 1948, A.M. 1949, University of South Carolina	D.C.
Hazur, Paul John A.B. 1948, The George Washington University	Va.	Heiberg, James Edward	N.Y.
Hazzard, George Olof B.S. in M.E. 1935, Villanova College	Pa.	Heideerd, Lloyd Huro	N.J.
Hazzard, Joan Marie	Md.	Heid, Albert A.B. 1941, Oberlin College	D.C.
Head, Almaria	D.C.	Heid, Ruth Virginia	D.C.
Head, Ruth Virginia	Va.	Heiler, Melvin Harold B.S. 1940, College of William and Mary	D.C.
Healey, Alan John A.B. 1948, The George Washington University	D.C.	Heilmann, Marjory Ann	Md.
Healey, Patrick Francis	Md.	Heim, Seymour	D.C.
Healy, Paul Thomas	W.Va.	Heimann, Peter Klaus	Va.
Hearn, Alexander McMurray	Mo.	Hein, Bernard Seymour	Pa.
Hearn, Richard Lee	Md.	Heine, Edward George	Md.
Heart, Gladys Matilda	D.C.	Heine, John Montgomery	Md.
Heart, Margaret Josephine	D.C.	Heine, Margaret Shirley	D.C.
Heasley, Herbert Kay	Tex.	Heinzel, Joseph Russell	D.C.
Heasley, Robert Charles	D.C.	Heintzelung, Margorie Lillian B.S. in Ed. 1929, Southeastern State College	D.C.
Heath, Daniel William	Va.	Heishman, Jennie Rose, Jr.	W.Va.
Heath, Wesley Tyler, Jr.	N.C.	Hessler, Barbara Jane	D.C.
Heaton, Elizabeth Rouseville	Va.	Hessler, George Thomas, Jr.	Tenn.
Heavey, Thomas Jackson B.S. 1917, United States Military Academy	Va.	Hekimian, Moses J.	D.C.
Hebb, Annes Gordon	Vt.	Held, John Carl, Jr.	Md.
Hebbard, Robert Millard	Va.	Helfrich, Susan Lipps	Norway
Hebda, Edward Albert	D.C.	Hellan, Ruth	Va.
Hebe, Harold William A.B. 1939, Pennsylvania State College	D.C.	Heller, Homer Kelsey	D.C.
Heberling, Emory Donald	D.C.	Heller, Milton	D.C.
Hebert, Paul Edmond	Minn.	Heller, Niles Roy B.S. in Ed. 1937, Pennsylvania State Teachers College, East Stroudsburg	Md.
Hed, Irvine Mark B.B.A. 1947, College of the City of New York	Md.	Heller, Norman Harold	D.C.
Hedht, Norman Francis	D.C.	Hellerman, Leo B.F.E. 1946, College of the City of New York	Pa.
Heck, James Edward	D.C.	Hellerman, Rebecca Cornell A.B. 1947, Hood College	D.C.
Heck, Janice Canolee	Va.	Hellman, Ann Frances	D.C.
Heck, John Henry A.B. 1941, Pennsylvania State College	Pa.	Hellmuth, James Grant	D.C.
Heckard, Dona Jean	D.C.	B.S. 1948, Yale University	

Hellstrom, Ralph Edwin A.B. 1945, Augustana College	Ill.	Hennessy, John William Hennessy, Thomas Francis Hennessy, Gerald Craft	Conn. D.C. D.C.
Helm, Herschel Hancock, Jr. A.B. in Govt. 1948, The George Washington University	Ky.	B.S. 1948, University of Maryland	D.C.
Helm, James Presley	Ky.	Henney, Alan Gilbert	Pa.
Helmandollar, Elinor Pennington	W.Va.	Hennigan, Helen Mary	W.Va.
Helmick, Joyce Gardiner	Va.	Henretta, Duval Howard	Md.
Helminiewicz, Richard Gerard	D.C.	Henretty, Robert Emmett	D.C.
Helton, Henry Stephen	D.C.	Henry, Edwin Stanton, Jr.	W.Va.
A.B. 1947, Wabash College		Henry, James Faulkner	N.Y.
Heltzel, Robert Thomas	W.Va.	Henry, Jesse Jay, Jr.	Pa.
Helvenston, Edward Gary	Va.	Henry, Katherine Elizabeth	
A.B. 1943, LL.B. 1938, Harvard University		A.B. 1947, University of Pennsylvania	
Helzer, Charles William	Fla.	M.S. 1948, The George Washington University	
B.S. in E.E. 1945, Georgia School of Technology		Henry, Norman Holden	D.C.
Helzer, Manuel Louis	Mass.	Henry, Raymond Charles	Iowa
Hembury, William Conrad	Va.	A.B. 1949, State University of Iowa	
B.S. 1944, United States Naval Academy		Henry, Thomas Robert	D.C.
Hemby, John Townley	Tex.	Hense, James Albert	Va.
Hemmings, John Buster	W.Va.	Henshaw, Edmund Lee, Jr.	Iowa
B.S. 1949, University of Virginia		Henshaw, Robert Harvey	D.C.
Hemple, William Ernst	D.C.	Hensley, Margaret	
Hemphill, Robert Joseph	Conn.	A.B. 1947, The George Washington University	
Hendershot, Gladys Elaine	Md.	Hensley, Roy Wilson	N.C.
Hendershot, Susan Lane	Md.	Henson, Chelsea Lucere	D.C.
Henderson, Alvin Eugene	Mo.	Henson, Edwin Nott, Jr.	D.C.
Henderson, James Lancaster	Ky.	A.B. 1948, The George Washington University	
B.S. 1939, United States Naval Academy		Henson, Lusitania Theresa	D.C.
Henderson, June Millicent	D.C.	Hepner, Gerhardt Irvine	D.C.
Henderson, Lyle Emerson	Wis.	Herbert, Edward Leslie	D.C.
B.S. 1945, Northwestern University		A.B. 1948, The George Washington University	
Henderson, Mark Hyman	Va.	Herbert, Lynn Gronna	D.C.
B.C.E. 1940, University of Wyoming		Herbst, Helen	Pa.
Henderson, Morris King	Va.	Hershakowski, Andrew	Conn.
B.S. 1943, United States Military Academy		Herd, Jean Robert	D.C.
Henderson, William Herman, Jr.	Va.	Hersenthal, Charles Neale	Md.
B.S. 1939, The Citadel		A.B. 1948, The George Washington University	
Hendrick, Charles Edward	Pa.	Hergert, John Charles, Jr.	Va.
B.S. 1949, University of Maryland		Herr, Laura Lippitt	Puerto Rico
Hendrick, Earl George, Jr.	Va.	A.B. 1949, The George Washington University	
Hendrickson, Duane Winthrop	N.Y.	Hess, Doris Lorraine Riley	D.C.
Hendrickson, Edith Orlena	W.Va.	Herman, David Joseph	D.C.
Hendrickson, Emma Hope	D.C.	Herman, Imogene Duffy	Va.
Hendrix, Arthur Keith	D.C.	Herman, Jack Robert	Va.
A.B. 1949, The George Washington University		A.B. 1943, The George Washington University	
Hendrix, Martha Sue	D.C.	Herman, Robert Hensley	Ohio
Hendrix, Mike Young	Ga.	B.S. 1937, United States Military Academy	
B.S. in Ed. 1934, Georgia Teachers College		M.B.A. 1948, Ohio State University	
Hendrix, Paul Max	D.C.	Hermann, John Heinz	Va.
Hendry, Morgan Leland	D.C.	A.B. 1945, St. Ambrose College	
Henehy, Alfred Garrett	Conn.	A.M. 1947, State University of Iowa	
B.F.E. 1942, State Teachers College, Castleton, Vt.		Hermann, Russell Royden	Alaska
A.B. 1949, The George Washington University		A.B. 1949, State College of Washington	
Henejar, Harold H.	D.C.	Hernandez, Carlos Juan	Puerto Rico
B.S. 1936, Southwest Missouri State College		Hernandez, Jose Miguel	D.C.
A.M. 1940, University of Missouri		Hernandez, Donald Lloyd	D.C.
Henesy, Gregory Thomas	D.C.	Hendon, Elizabeth Louise	Md.
A.B. 1946, The George Washington University		Herr, Caroline Virginia	Va.
Henesy, Thomas Joseph	D.C.	Herr, Harriet Martha	Pa.
Hensley, Robert Greney	Md.	Herrick, Harold Colton, Jr.	Mo.
Hennessy, Charles Edward	Md.	B.S. in E.E. 1947, B.S. in Eng. Adm. 1948, Washington University	
Hennessy, John Henry, Jr.	Ga.	Herring, Donald Dewar	Mass.
		Herrington, Alice Elaine	Ill.

Herrity, Joseph B. J.	Pa.	Highsmith, Horace Eugene	D.C.
Herrmann, Vilma Marie	D.C.	Hight, Jack	Tes.
Herron, Frank, Jr.	Md.	B.S. 1949, College of William and Mary	
Hersey, Sheila Sheldon	D.C.	Hightower, John Newton, Jr.	Fla.
Hershman, Marshall	Mass.	Hildebrand, Grace W.	Va.
A.B. 1949, The George Washington University		B.S. in Ed. 1935, Pennsylvania State Teachers College, Slippery Rock	Md.
Hershon, Lucille F.	Va.	Hildebrand, John Raymond	
Herta, Jean Katherine	D.C.	A.B. 1949, University of California	Pa.
Hertle, Charlotte E.	N.Y.	Hildebrand, Robert John	Va.
Hertz, Jerome Samuel	Mass.	Hildemann, Gertrude	Md.
Herwig, Anne Hildegard	Va.	Hildenbrand, Frieda Barbara Caroline	
Herz, Martin Florian	D.C.	A.B. 1932, Goucher College	Pa.
B.S. 1937, Columbia University		Hilderbrandt, Earl Foster	D.C.
Heslen, Francis Charles	Ga.	Hildreth, David Melvin	Md.
Heslop, Robert Jarrott	N.Y.	Hildreth, Margaret Sage	D.C.
A.B. 1948, West Virginia University		Hildreth, Richard	Va.
Hess, Charlotte Rebecca	D.C.	Hill, Albert Daniel	Colo.
B.S. in Med. Tech. 1945, Temple University		Hill, Arlow Fielding	W.Va.
Hess, Frank Gadd	Pa.	Hill, Carolyn Elise	
Hess, George Frank	Md.	B.S. 1929, University of Virginia	Ga.
Hess, Ida Irene	Ky.	Hill, Charles Albert, Jr.	
A.B. 1931, Indiana University		B.S. 1941, United States Naval Academy	Va.
Hess, Maurice Albert	D.C.	Hill, Clark Daniel	
Hess, Wilbur Kenneth	Va.	B.S. in Ed. 1938, Wilson Teachers College	D.C.
A.B. 1949, The George Washington University		Hill, Dave Harmon	D.C.
Hess, William Jerome	Va.	Hill, Edward Weathers, Jr.	D.C.
Hess, William Werner	Va.	Hill, Elizabeth Lois	
Hesselkesser, James Maxwell	Fla.	A.B. 1947, Wayne University	Fla.
A.B. 1949, Berea College		Hill, Ermeta E.	Va.
Hessenbuer, John Charles, Jr.	Md.	Hill, Frank Highland	Md.
Hessler, Bernard Phillip	Md.	Hill, Gaylord Edward	Pa.
Hester, Donald Cameron	Md.	Hill, Gwendolyn Elizabeth	
A.B. 1943, Buffalo College		B.S. 1941, Indiana State Teachers College, Pa.	D.C.
A.M. 1944, Ohio State University	Ga.	Hill, Henley Charles	Va.
Hester, Juanita	D.C.	Hill, James Wilburn	D.C.
Hettich, Paul Walter	Md.	Hill, John Henry	
Hetzler, William Joseph		A.B. 1944, A.M. 1947, Columbia University	Va.
B.S. 1948, Georgetown University	Ga.	Hill, Joseph Andrew	
Heule, Franklin Ivanhos	N.Y.	A.B. 1939, Lynchburg College	Va.
Hewett, Ellen Nancy	Fla.	L.L.B. 1949, Louisiana State University	
Hewett, Norma Jean	Va.	Hill, Joseph Carl	Mo.
Hewitt, Clifford Adelbert		B.S. 1940, Mount St. Mary's College Maryland	
Ph.G. 1937, Columbia University	Ill.	Hill, Kenneth E.	Md.
Hewlett, Glenn Howard	N.Y.	B.S. 1941, University of Missouri	D.C.
Heyer, Saul David	D.C.	Hill, Leon McKenzie	Va.
Hiatt, Geneva Morrow	D.C.	Hill, Marjorie Ann	D.C.
Hiatt, Howard Herschel	Va.	Hill, Raymond Joseph	Va.
Hickerson, Florence Virginia		Hill, Richard Edwin	
B.S. 1927, College of William and Mary		B.S. 1949, Virginia Military Institute	Va.
A.M. 1943, George Peabody College for Teachers	D.C.	Hill, Richard Work	Va.
Hickey, Elizabeth Ann	Conn.	Hill, Robert LeRoy	D.C.
Hickey, Robert Edmund	Pa.	Hill, Rosalie Victoria F.	
Hicks, James Thomas		Ed.B. 1931, Rhode Island College of Education	Ind.
B.S. 1945, A.B., M.S. 1946, University of Pittsburgh		Hill, Thelma Pauline	Md.
Hicks, Louis Edward	Md.	Hill, Thomas Burbridge, Jr.	Va.
A.B. in Govt. 1947, The George Washington University		Hill, William Bethel, Jr.	
Hiemenz, James Glenna	Va.	B.S. 1941, University of Virginia	Norway
Hiers, Jasper Theodore III	N.C.	Hille, Dagny Maxsethe	D.C.
Hiestand, Dale Melvin	Ohio	Hillebrand, Herbert Walter	
A.B. 1949, Mount Union College		A.B. 1943, Elmhurst College	D.C.
Hieta, Clifford William	Va.	Hilliard, Benjamin Clark	
Higbee, Charles Eldon	N.M.	A.B. 1948, West Virginia University	Ala.
Higginbotham, Hazel M.	W.Va.	Hilliard, Glenn Schwartz	Md.
Higgins, Blanche Wirtly		Hilliard, Kathryn Coombs	Wis.
Higgins, Louis Edward	Ill.	Hillier, Floyd William	
Higgins, Ruth Eleanor	Pa.	B.S. 1948, Michigan State College	
Higginson, Ella Joan	Va.		

Hillman, Franklin Powell A.B. 1936, Emory and Henry College A.M. 1940, The George Washington University	Va.	Hlub, Julius George A.B. 1929, Gettysburg College Ed.M. 1940, Johns Hopkins University	Md.
Hillman, Jack Allan Hillman, William Jennings A.B. 1925, Emory and Henry College	D.C. Va.	Ho, Iei-Shih Hobart, Thomas D. B.S. in E.E. 1941, Virginia Polytechnic Institute	China Va.
Hillock, Donald MacLean B.S. 1949, American University	D.C.	Hobbes, Alan Buxton A.B. 1939, Washington and Lee University	Fla.
Hillyard, John Francis Hilton, Andrew Carson Hilton, Fred Herbert, Jr. A.B. 1935, A.M. 1948, University of Pittsburgh	D.C. Miss. D.C.	LL.B. 1947, The George Washington University	
Hilton, John Perry Hilton, Rhodene Elizabeth Hilton, William Philip Himel, William B.S. 1937, Northwestern University	D.C. Va. D.C. D.C.	Hobbs, Edward Victor Hobbs, Herman Hedberg Hobbs, Madge Elois Hobbs, Paula Rose Hobbs, Richard Huntington Hobday, Vincent Nelson Hoble, Stedman Bennett A.B. 1949, Harvard University	Md. Va. Mo. Va. D.C. D.C. Calif.
Himelarb, Jordan Sheldon Himelarb, Stanford William Himmel, Ivan B.S. 1947, United States Naval Academy	D.C. D.C. Ill.	Hobson, Carlton McKinley, Jr. Hochman, Gertrude Hochwald, Jack Hocking, William Maybaw Hodge, David MacMahan B.S.S. 1949, Georgetown University	Va. D.C. D.C. Md. Pa.
Hinckley, William Wheeler A.B. 1931, Rollins College A.M. 1933, Columbia University	Md.	Hodge, Doris Gertrude Hodge, Dorothy Ann Hodge, William Rust Hodges, Adley R. Hodges, James Edward Hodges, Quanten Edward B.S. 1945, University of Georgia M.S. 1947, John B. Stetson University	Neb. Neb. D.C. Maine Md. Ga.
Hine, Frank Brown Hiner, Richard L. B.S. 1929, Iowa State College of Agriculture and Mechanic Arts A.M. 1933, The George Washington University	Va. Iowa	Hodges, Stanley Rice Hodges, Willard Jefferson, Jr. LL.B. 1937, University of Alabama Hodgson, Jack Charles Hodgson, Robert Waller Hoeler, Bruce Raymond B.S. 1940, United States Naval Academy	Va. Ala. D.C. Calif. N.Y.
Hines, Charles Widmire Hines, Emmett Womack, Jr. B.S. in M.E. 1946, Cornell University M.B.A. 1948, Columbia University	D.C. N.Y.	Hoeler, Frederick Adams Carl Dr. Jur. 1931, Friedrich-Wilhelms University, Berlin LL.M. 1941, Harvard University	Va.
Hines, Theodore Christian Hines, William Albert Hines, Patricia Williamette Hino, John William Hintze, Arthur Harris Hintze, William B.E.E. 1949, The George Washington University	D.C. Tenn. Canal Zone D.C. D.C. D.C.	Hoepner, Russell Leroy Hoening, Kurt Heinz Dr. Jur. 1941, The University of Berlin Hoff, Frank Xavier B.S. 1949, Mount St. Mary's College Hoff, Joseph Harrison Hoffheim, Lorraine Hoffman, Arthur Daniel Hoffman, Conrad Richard Hoffman, Eleanor Louise A.B. 1945, Miami University Hoffman, Howard Paul Hoffman, John Charles B.S. 1948, The George Washington University	Va. Ala. D.C. Va. Ind. N.Y. D.C.
Hirsch, Robert Bruce Hirschfeld, Kenneth Hirsh, Victor Raymond Hirt, Mary Cornell A.B. 1945, Goucher College Hise, James Cletis A.B. 1948, University of Illinois Hise, William Curtis A.B. 1948, A.M. 1949, University of Illinois	D.C. N.Y. D.C. Md. Ill. Ill.	Hoffman, Leon David Hoffman, Marion L. B.S. 1940, Pennsylvania State Teachers College, Bloomsburg Hoffman, Robert Douglas Hoffman, William Alexander III Hoffmann, Joan Hofrichter, Leonore A. Hogan, Douglas LeRoy Hogan, Francis Eugene Hogan, John Edward Hogan, John Francis, Jr. A.B. 1940, Mercer University	D.C. Germany Pa. D.C. Va. Ind. N.Y. Md. D.C. Va. Md.
Hisey, Donald Gene Hisle, Clinton Montgomery Hiss, Alfred Lee Hiss, Ann Grainger Hitchcock, Allen Merrill Hitchcock, Barbara Singley A.B. 1941, Columbia University Hitchings, Willard Grant Hite, Winston Martin Hitt, Frederick William, Jr. B.S. 1939, Pennsylvania State College Hix, Ernest Theodore B.M.E. 1949, The George Washington University	Ohio D.C. W.Va. D.C. Va. D.C. N.Y. Va. Pa. Va.		
Hixon, Deion Lyle Hlatky, Edward Hleovan, George Nicholas	Ala. D.C. N.Y.		

Hogan, Marjorie Bell	Md.	Holman, John Desmond	Va.
A.B. 1942, Shorter College		B.S. 1944, Webb Institute of Naval Architecture	
Hogan, Walter Thomas, Jr.	Ill.	Holman, William Brenner	Ind.
Hogewind, Cornelia Johanna	Netherlands	Holme, Justin Mitchell	Mo.
A.B. 1947, Smith College		B.S. in C.E. 1940, M.S. 1940, University of Pennsylvania	
Hohmann, Thomas Edward	Md.	M.S. 1942, Lehigh University	
Hokanson, Oscar Melvin	Va.	Holmes, Darrell Forsythe, Jr.	Va.
Hoke, John Ray	Md.	Holmes, Elizabeth Jean	D.C.
Hoke, Julius Unverzagt	Pa.	Holmes, Ethel Catherine	D.C.
B.S. in Ed. 1947, Pennsylvania State Teachers College, Shippensburg		Holmes, Gerald Peter	Wash.
Hoke, Neil Herman	D.C.	A.B. 1947, University of Washington	D.C.
A.B. 1949, The George Washington University		Holmes, Grace Bruce	
Holben, Donald Russell	Va.	B.S. 1919, University of Maryland	
Holbrook, Offie James	Ky.	M.S. 1922, Ph.D. 1925, The George Washington University	D.C.
Hokumb, Frederick Morse, Jr.	D.C.	Holmes, Jentry Scott	
Holcombe, William Collis	D.C.	A.B. 1948, The George Washington University	D.C.
A.B. 1947, The George Washington University		Holmes, Paul Francis	Mo.
Holzman, Frank Joseph	Pa.	Holmes, Thomas James	
A.B. 1949, Muhlenberg College		B.S. 1924, University of Maryland	
Holden, Jack Pritchard	Md.	M.S. 1940, The George Washington University	Conn.
Holden, Karlene Mae	Va.	Holmes, Wilbur Thomas	
Holder, Richard Joseph	Pa.	A.B. 1938, Wesleyan College	
Holderness, Robert B.	Va.	A.M. 1939, Columbia University	D.C.
Hoddsambeck, Sam	Ala.	Holmgren, Carol Mae	Conn.
Hole, Mary Elizabeth	Oreg.	Holms, Richard Charles	Ill.
Holman, William Daniel	Tenn.	Holt, Eugene Larson	
Holland, Bond Larry	Md.	B.S. in Ed. 1940, Milwaukee State Teachers College	Va.
Holland, Alice	Va.	Holt, Clara Naomi	Ill.
Holland, Emily Godfrey	Va.	Holt, Edward Brewster	
B.S. 1927, University of Pennsylvania		B.S. 1947, University of Michigan	D.C.
Holland, Harrison Melcher	Wash.	Holt, Elmer Dean	Ind.
A.B. 1944, University of Washington		Holt, Felix Thomas, Jr.	
A.M. 1949, Columbia University		A.B. 1949, American University	Hawaii
Holland, Irene T.	D.C.	Holt, George Paulet	Wash.
Holland, John William	Ohio	A.B. 1949, University of Hawaii	Va.
Holland, Merle Fleming	Va.	Holt, James Howard	
Holland, Morton	N.Y.	Holt, Nadine R.	D.C.
B.S. in E.E. 1947, Cornell University		B.S. 1940, University of Maryland	D.C.
Holland, Sallie Lu	Va.	Holtz, Herbert Manuel	D.C.
Holland, Trivium Shandy	Va.	Holtzman, Irving	
A.B. 1949, Lynchburg College		A.B. 1940, Brooklyn College	D.C.
Holland, Waneta Cimbrel	Va.	Holtzman, Marilyn	Ind.
B.S. 1945, West Virginia University		Holtzworth, Dorothy Catherine	
Hollemen, Martin Everett	D.C.	A.B. 1944, College of Notre Dame of Maryland	
Hollenberg, Richard Alvin	Va.	A.M. 1946, Catholic University of America	Va.
Holler, Donald Wyatt	Md.	Honabach, Elmer Wilson	Ind.
Holley, Max Vinson	Va.	Honeck, Walter	D.C.
B.S. 1939, The George Washington University		Honemann, Jean Louise	Mo.
Holladay, Reynold Ross	Pa.	Honey, Nancy Lee	N.Y.
Hollaman, William Jelks, Jr.	Va.	Honig, Doris Marcelle	Md.
Hollingsworth, Gerald Eugene	D.C.	A.B. 1944, Hunter College	France
Hollingsworth, James Boetler	Md.	Honig, Ernie A.	Va.
Hollingsworth, Russell K. Miller, Jr.	D.C.	Honore, Annie Marie-Laure	
Hollingsworth, William Leon	D.C.	Honsowetz, Russell Edward	
Holla, Elda Lorraine	Pa.	B.S. in Ed. 1916, University of Idaho	Va.
Holla, Frank	D.C.	Hood, Earl Winston	Md.
Holla, Helen Louise	D.C.	Hood, Louis, Jr.	N.C.
Hollis, James George	Md.	A.B. 1948, Amherst College	
B.S. 1948, American University		Hood, Robert Hunter	Md.
Holla, Thomas Clement	Pa.	B.S. 1942, Davidson College	Pa.
Hollomon, Raymond Ernest	Oreg.	Hoogerwerf, Norman Francis	Ark.
Hollon, Thomas Harry	D.C.	Hook, George Oliver	D.C.
Holloway, John Ennis	Md.	Hook, Arnold David	D.C.
Holloway, Lee Thomas	Md.	Hooper, Albert Gordon, Jr.	D.C.
Holloway, Walter, Scott, Jr.	Fla.	Hoopes, David Spencer	
Holman, Jane C.	Va.		
A.B. 1944, University of South Carolina			

Hoopes, Townsend Walter A.B. 1944, Yale University	N.Y.	Horsky, Eugene Gregory B.S. 1948, B.C.E. 1949, Rensselaer Polytechnic Institute	N.Y.
Hoover, Charles R.	Wyo.	Horsley, Carol Jean	Oreg.
Hoover, Georgiana Christine	D.C.	Horton, Donald Raymond B.S. 1948, Valley City State Teachers College	N.D.
Hoover, H. Denis B.S. 1944, Madison College, Va.	Va.	Horton, Marvin Vale, Jr. B.S. 1948, University of North Carolina	N.C.
Hoover, Wallace Archer	D.C.	Horvath, Elizabeth Ann	Va.
Hoover, William Edward	D.C.	Horvath, John George B.S. 1949, University of Denver	Md.
Hope, Robert Allison A.B. 1920, Presbyterian College	D.C.	Horvath, Leo James B.S. 1947, Pennsylvania State College	Va.
Hope, Robert Stocks	Va.	Horwitz, Harold	N.Y.
Hopkins, Agnes Ferguson	D.C.	Hoshida, Toshio	Calif.
Hopkins, George Mathews Marks B.S. in C.E. 1944, Alabama Polytechnic Institute	Ala.	Hosmer, Richard Charles B.S. 1939, L.L.B. 1954, The George Washington University	D.C.
Hopkins, L.L.B. 1949, University of Alabama	Va.	Hosfield, Raymond Frederick	D.C.
Hopkins, Gray Switzer	Pa.	Hoskins, Raymond	D.C.
Hopkins, John William	Pa.	Hosok, David Russell	D.C.
Hopkins, Julius Prince	Va.	Hosole, Gilbert Joseph	Mass.
Hopkins, Marguerite Marie Rose	Mass.	Houghton, Evelyn Lohnes B.S.E. 1947, Teachers College of the City of Boston	Mass.
Hopkins, Stephen Cornwell	D.C.	Houghton, Robert Clarence	N.Y.
Hopkins, Theodore Reed A.B. 1947, Stanford University	Calif.	Hosok, Jo Anne	Va.
Hoppe, Glenna Jean	Va.	Hosoditch, George Sam, Jr.	D.C.
Hoppe, Louis William B.S. 1949, University of Illinois	Va.	Hosie, Roger Andy	D.C.
Hopper, Henry Pearson B.S. in Ed. 1933, M.S. in Ed. 1934, University of Pennsylvania	Pa.	Hosper, June Patricia	D.C.
Hopper, Nathaniel Wilson	Md.	Hosse, Edward Hedley	D.C.
Hopper, Thomas Bradford, Jr.	D.C.	Hosse, Lawrence Samuel	Md.
Hoppmann, Kurt Heinz	Va.	Hosse, Maurice Irene	Va.
Hopps, Louise Marie	Okla.	Hosse, Mary Elizabeth	Tenn.
Hopson, Jeanne Louise	Ill.	Hosseal, Robert Wright, Jr. B.S. 1943, The Citadel	S.C.
Horton, Nancy	Ill.	Houser, Frederick Russell A.B. 1948, The George Washington University	Pa.
Hord, Keril Stuart	D.C.	Houser, Herbert Harold	D.C.
Horel, Ned Cuddeon A.B. 1947, Carroll College	Va.	Hoswore, Robert Eugene A.B. 1949, Spring Hill College	La.
Hosen, Morton Elliott	Va.	Houston, James Knox	D.C.
Hosenstein, Joseph Chaim	D.C.	Houston, Robert Joseph	D.C.
Hosvick, Harold Shigen	Md.	Houston, Sam	D.C.
Horn, Donald Raymond B.S. 1945, Northwestern University	Ill.	Houts, Vernon Van Cleve B.S. 1936, Baker University	Md.
Horn, Henry Joseph B.S. 1941, Lehigh University	Pa.	Hovatter, Euphemia Meiker	W.Va.
Horn, Herbert Gusten	Va.	Hovatter, James Jerome	Md.
Horn, Rufus Austin B.S. 1941, United States Coast Guard Academy	D.C.	Hoverson, Jean Cecelia	Va.
Horne, Leon Russell B.S. 1943, Northeastern University	Mass.	Hovis, Dennis Elton	Md.
Horne, Maude Minge A.B. 1940, Duke University	D.C.	Howald, Percy John B.S. 1949, University of Alabama	Ala.
Hornstein, Naomi A.M. 1934, University of North Carolina	N.H.	Howar, Edmund	D.C.
Horne, Philip Scott	Md.	Howar, Richmond Joseph	D.C.
Horning, Marjorie Ann	S.D.	Howard, Betty Jane	Md.
Horning, Ross Charles A.B. 1948, Augustana College	Ala.	Howard, Charles Raymond II	Ill.
Hornby, William Paul	D.C.	Howard, Edward Langes	D.C.
Hornstein, Ida Edith	D.C.	Howard, Henrietta Rachwell B.E. 1937, Milwaukee State Teachers College	Wis.
Hornstein, Naomi	N.Y.	Howard, John William A.B. 1949, Catholic University of America	Md.
Horowitz, Elias B.S. 1941, College of the City of New York	N.Y.	Howard, Robert Lynwood A.B. 1948, University of Alabama	Ala.
Horowitz, Emanuel B.S. 1945, College of the City of New York	Pa.	Howard, Ruth Phyllis	D.C.
Horowitz, Herbert David LL.B. 1948, LL.M. 1949, The George Washington University	D.C.	Howard, Sidney H.	N.Y.
Horowitz, Milton Arthur	D.C.	Howard, Thomas Burke	D.C.
Horrigan, Michael James	D.C.	Howard, William John	D.C.
		Howard, William Reed	Nebr.

Howard, William Rolland	Wis.	Hudgins, John Jefferson	D.C.
Howe, Alice Margaret	D.C.	LL.B. 1948, LL.M. 1949, The George Washington University	S.C.
Howe, Denis Herbert George	Md.	Hudson, Dugald Walker	
Howe, Jay Thomas	D.C.	B.S. 1949, Presbyterian College	
Howell, Anne Thomas	Va.	LL.B. 1949, The George Washington University	W.Va.
B.S. 1942, Madison College		Hudson, James Matthew	
Howell, David Mitchell	D.C.	A.B. 1948, The George Washington University	Md.
Howell, Frances Dodd	D.C.	Hudson, John Frederick	Va.
Howell, William Arthur	Colo.	Hudson, Joseph Randolph	D.C.
Howe, Nelson Luther, Jr.	La.	B.S. 1948, University of Virginia	D.C.
A.B. 1945, Louisiana Polytechnic Institute		Hudson, Robert Ray, Jr.	D.C.
Howarth, Shirley Claire	D.C.	Huff, Gerald Lewis	D.C.
Howerton, Charles Cabaness	Tex.	Huff, Marion Mitchell	Md.
B.S. 1946, United States Naval Academy		Huff, Maxine	Minn.
Howerton, John Benjamin	Va.	Huffman, Randolph Edgar	Va.
A.B. 1949, A.M. 1950, University of Richmond		Huffman, Zelia Mary	Conn.
Howerton, Joseph Benjamin	Md.	Hufford, Priscilla Frances	D.C.
Howes, James Knox	D.C.	Huggins, David Sherwood	D.C.
Howes, Timothy James	Mass.	Hughes, Brandau Chappelle	Md.
A.B. 1948, Harvard University		Hughes, Brent Harland	
Howett, Jas. Miller	N.J.	Hughes, Carl Willis	Va.
Howett, Maxwell Kenneth	Va.	B.S. 1947, Wilson Teachers College	D.C.
Howland, Felix	Maine	Hughes, David Walker	Pa.
B.S. 1924, United States Naval Academy		Hughes, Edmund Crump	Ill.
Howland, Harold Howard, Jr.	Mass.	Hughes, Edward James	
A.B. 1947, The George Washington University		Hughes, Edward Wilmanson	
M.B.A. 1947, Harvard University		A.B. 1941, LL.B. 1947, Washington University	Pa.
Howley, John Reed	D.C.	Hughes, Elizabeth Margaret	D.C.
A.B. 1943, Georgetown University		Hughes, Francis Homer, Jr.	Md.
Howser, Beverly Jean	Mass.	B.S. 1946, Salem College	
Howle, Anne Mildred	Md.	Hughes, Harry Roe	D.C.
B.S. 1947, University of Maryland		B.S. 1949, University of Maryland	Va.
A.M. 1946, Columbia University		Hughes, Henry Franklin	
Howle, Laura Moore	D.C.	Hughes, James A.	Md.
Hoyler, Hamilton Marshall	Va.	A.B. 1940, New York University	
A.B. 1937, Columbia University		Hughes, James Thomas	
LL.B. 1948, Harvard University		B.S. 1910, Southern Methodist University	Va.
Hoyne, Lucile Eleanor	D.C.	Hughes, John James	Va.
Hoyt, Homer Lewis	Md.	Hughes, John Temple	D.C.
Hoyt, Jeanne Edith	D.C.	Hughes, Marjory Eleanor	N.Y.
Hoyt, John G.	D.C.	Hughes, Michael Vincent	D.C.
B.S. 1943, United States Military Academy		Hughes, Robert Joseph	Va.
Hoyt, John Paul	Md.	Hughes, William Malcolm	Va.
B.S. 1928, Middlebury College		Hughes, William Wansatt	Conn.
A.M. 1943, Columbia University		Huglitt, Joshua Keefe	Ohio
Hoyt, Kenneth Boyd	Md.	Hui, Wing Yam	Va.
B.S. 1948, University of Maryland		Hules, Robert Joseph	Pa.
Hoyt, William George	N.Y.	Hulish, Harriett Virginia Folger	Pa.
Hrozenak, John Ferdinand	Pa.	Hulish, Joan Spofford	
Hrysenka, Stanley Robert	N.J.	Hulings, Harry Joseph	
Huang, Shiao Yi	China	B.S. in Ed. 1950, Pennsylvania State Teachers College, California	Tenn.
A.B. 1945, Central Institute of Political Sciences		Hull, Alexander Harold, Jr.	Tenn.
A.M. 1949, The George Washington University		Hull, Maury Isaac	
Huard, Louis Philippe Roger	N.H.	A.B. 1933, Southwestern University	N.Y.
B.S. 1948, Georgetown University		A.M. 1946, The George Washington University	P.C.
Hubart, Glenn, Arthur, Jr.	Ind.	Hull, Warren Robertson	
Hubbard, David	Va.	Hulley, James Pierce	
Hubbard, Russell Hale, Jr.	Conn.	B.S. 1924, United States Military Academy	Ill.
B.S. in E.E. 1944, Syracuse University		Huls, Ronald La Vern	D.C.
Hubbard, William Franklin, Jr.	Md.	Hulse, Jackson Dowling	Ohio
Hibber, Doyle William	Ill.	Hulse, Thelma Carmen	Va.
Hudak, Mary Magdalena	Ohio	Hulvey, Charles Newton, Jr.	
Hude, Harry William	Miss.	B.S. 1926, University of Virginia	
Hudgens, Ann Shearer	Va.		

Students Registered

457

Hume, David A.B. 1937, University of Texas LL.B. 1946, Southern Methodist University	Tex.	Hurson, James Vincent B.S. 1948, American University	Md.
Hume, John Wesley A.B. 1948, University of Pittsburgh	Wis. Va.	Hurst, Carl Wilson, Jr. A.B. 1949, The George Washington University	Tenn.
Hummel, Henry Black	D.C.	Hurst, Georgia Leone	Mo.
Hummer, Charles Allen	Va.	Hurst, Thomas Lee	Md.
Hummer, Robert Warren	D.C.	Hurt, Mary Tex A.B. 1949, The George Washington University	Ala.
Humphrey, John Julian B.S. 1948, New York State College for Teachers, Buffalo M.S. 1949, St. Bonaventure's College and Seminary	D.C.	Hurwitz, Harlan Earl A.B. 1949, The George Washington University	D.C.
Humphrey, Joseph Henry, Jr.	Tex.	Hury, Julia Ann	Conn.
Humphrey, Lou Ann	Va.	Huss, Regina Harriet	Pa.
Humphreys, Richard Raum A.B. 1949, Ohio Wesleyan University	Md.	Hussar, Edward John A.B. 1948, The George Washington University	Ill.
Hundley, Henry Robert	W.Va.	Husser, A. Owen	Va.
Hung, Chang Chong A.B. 1947, San Diego State College A.M. 1949, Columbia University	China	Huston, Kathryn Elliott	Va.
Hungerford, Beverly Joan A.B. 1949, Mary Washington College	Conn.	Hutchinson, Alan Stanton B.S. 1948, St. Martin's College	D.C.
Hunley, William Henry	Va.	Hutchinson, Fileen Marie	D.C.
Hunsaker, James Ewing	D.C.	Hutchinson, George Edward	D.C.
Hunsaker, Katherine Frances	D.C.	Hutchinson, Herbert Malcolm A.B. 1948, Duke University	N.J.
Hunt, Edward Everhart M.P.A. 1949, New York University	Tenn.	Hutchinson, Howard Preston	Va.
Hunt, Opal	Tex.	Hutchinson, Nora	Mo.
Hunt, Thomas Joseph	N.Y.	Hutchinson, Wayne Frederick	N.Y.
Hunt, Warren Taylor	Oreg.	Hutchinson, William David A.B. 1949, University of Maryland	Va.
Hunt, William George A.B. 1949, State University of Iowa	Iowa	Huter, O. Robert	Va.
Hunter, Donald Vasilakis, Jr.	Md.	Hutton, John	Pa.
Hunter, Eldred Tait, Jr.	Md.	Hutton, Burton Simon	D.C.
Hunter, George Homer	D.C.	Hutts, Edward William	Calif.
Hunter, Guy Norman	D.C.	Hutton, Harrison Dunbar A.B. 1948, Southeastern Louisiana College	La.
Hunter, Jesse Smith B.S. 1942, New York State Teachers College, Oneonta	N.Y.	Hutton, Sylvia Fay Lorenz	Tex.
Hunter, John Behr	W.Va.	Hutt, James Brooke, Jr. B.S. in E.E. 1942, University of Michigan	Va.
Hunter, Lucian O.	Ky.	Hutt, Stanley David	D.C.
Hunter, Millard Stanton B.S. 1948, University of North Carolina	N.C.	Hutt, Vincent Benjamin	N.Y.
Hunter, Nancy Elizabeth	Vt.	Hutton, Daniel Cogdell A.B. 1947, University of Utah	Va.
Hutton, Richard Edwin A.B. 1947, The George Washington University	D.C.	Hutton, Junius Oscar B.S. 1944, University of Maryland	D.C.
Huntress, Andrew Whitehouse	Va.	Huyer, Anne	Fla.
Huett, Estelle Elisabeth	Md.	Hyde, Edward Richard B.S. in E.E. 1948, Purdue University	N.Y.
Hunziker, Frederick John B.S. 1949, Tufts College	N.J.	Hyde, Grant Lafayette	Calif.
Hurd, Marjorie Kathryn	Minn.	Hyde, Joanne Stranahan	Md.
Hurdie, Richard Emmett	D.C.	Hadenham, William Robert A.B. 1946, Miami University A.M. 1947, Syracuse University	Ohio
Hurley, Charles Warren	D.C.	Hymowitz, Helen	D.C.
Hurley, Helen Kathryn A.B. 1946, Seton Hill College	Pa.	Hymowitz, Stanley L.	D.C.
Hurley, John Gregory, Jr. A.B. 1948, The George Washington University	D.C.	Hynes, Mary Esther B.S. 1948, University of Maryland	Va.
Hurley, Joseph Patrick	Md.	Hynes, Robert Edward	Va.
Hurley, Karl Corley	Md.	Hynes, Thomas Edmund	Maine
Hurley, Mary Hope	N.M.		
Hurley, Maryanne A.B. 1948, Geneva College	D.C.		
Hurley, Thomas J.	D.C.		
Hurley, Wilson Patrick B.S. 1948, United States Military Academy	N.M.		
Hurchman, Jack	D.C.		
		I	
		Iacangelo, Ralph Pasquale B.S. 1948, Wilson Teachers College	D.C.
		Iadon, Angelo Iak	N.Y.
		Iadon, Richard	Ohio
		Ibrahim, Walid Yusuf	D.C.

Ice, John Frederick	Pa.	Iseri, Kathleen	Calif.
Icehower, David Edward	D.C.	Ishio, Sunao	Md.
Idome, Leon Sumner	Md.	Isumama, Kyoko	Va.
B.S. 1940, University of Toledo		Iskrant, Albert Patrick	D.C.
M.Ph. 1947, University of Michigan		A.B. 1930, National University of	
Idov, Norris Benjamin	Md.	Ireland	
Iylehart, John Joseph	Md.	A.M. 1940, Catholic University of	
Ihara, Helen	Calif.	America	
Ihrig, Katherine Aura	Ohio	Iser, Jeanette Arlene Carroll	D.C.
A.B. 1930, University of Wisconsin		Iseley, Dale Elmer	D.C.
Iiams, Thomas M., Jr.	D.C.	Iseley, Marilyn Rose	D.C.
Ikegami, David Takeshi	Hawaii	Isom, Clifford Clinton	
A.B. 1949, The George Washington		B.S. 1939, Kansas State College of	
University		Agriculture and Applied Science	
Illg, Paul Louis	D.C.	Israel, Alvin	Va.
A.B. 1936, A.M. 1941, University of		Israel, Thomas Sewell	Md.
California		Itmyre, Edwin Reicher	D.C.
Imirie, Charles Wade	Va.	Ito, Violet Sumac	Pu.
Immen, Norbert George	D.C.	Judicello, Lawrence Samuel	N.Y.
Imre, Celal	D.C.	Iuso, Mary Jo	D.C.
Imrie, Walter Curtis	Va.	Iverson, Donald Bernard	Va.
B.S. 1946, Rhode Island State College		Iverson, John Roger	D.C.
A.M. 1940, American University		Ivey, William James	Fla.
Indorf, Frederick Anderson	Mo.	Ivey, William Richard	Inda
B.S. in Ed. 1938, University of		Iyer, S. Vancheswara	
Missouri			
A.M. 1949, The George Washington			
University			
Infosino, Carmelo John	N.J.	Jack, Paul Sumtars, Jr.	Va.
Inally, Ronald Boyd	D.C.	Jackowski, Amal Walter	Map
Ingerson, Robert Bruce	Minn.	B.S. 1949, American International	
Inglis, Anthony	N.Y.	College	D.C.
Inglis, Robert Scott	D.C.	Jackson, Betty Louise	Me.
Ingram, Frances Baker	D.C.	Jackson, Charles Edgerton, Jr.	
A.B. 1947, The George Washington		B.S. 1945, United States Naval	
University		Academy	Ohio
Ingram, Robert Lee	N.C.	Jackson, Duane J.	
Ingersen, Ellen Edith	Denmark	B.S. 1946, Central State College	Me.
Innamorati, Anthony Walter	Md.	Jackson, Eugene Joseph	Tenn.
B.S. 1948, Massachusetts Institute of		Jackson, Frances Beatrice	
Technology		B.S. 1941, East Tennessee State	
Innes, John Reynolds	D.C.	College	Me.
Innes, Yvonne Keeble	D.C.	Jackson, Frank Holbrook	
Inouye, Chuzuko	Ariz.	B.S. 1948, University of Maryland	D.C.
Inserni, Hiram	D.C.	Jackson, Jeremy Shreve	Go.
Intrater, Natalie Block	D.C.	Jackson, Joseph Warren	
Inzanna, Joseph Francis	N.J.	A.B. 1948, The George Washington	
Ionno, Joseph Anthony	Conn.	University	Va.
Iovino, Charles Anthony	D.C.	Jackson, Luther Harden	Me.
Irick, Leonard Mason	Ky.	Jackson, Marjorie Ann	Tenn.
Iron, Joseph	N.Y.	Jackson, Martha Nell	Me.
Irons, Edward Sterling	D.C.	Jackson, Owen Wilson, Jr.	Pa.
B.S. 1942, J.D. 1947, University of		Jackson, Philip Grant	Ind.
Illinois		Jackson, Robert Eugene	
Irons, Nancy Irene	Md.	B.S. 1947, The George Washington	
Irvin, William Gordon, Jr.	D.C.	University	D.C.
Irvine, Eleanor Hoel	N.Y.	Jackson, Robert McClelland	Me.
A.B. 1917, Cornell University		Jackson, Ruth Stevenson	
Irvine, George Timothy	Iowa	A.B. 1948, The George Washington	
Irwine, David Conrad, Jr.	D.C.	University	Va.
Irwin, Gratian George	W.Va.	Jackson, Sarah White	
A.B. 1947, West Virginia University		A.B. 1948, Agnes Scott College	D.C.
Irwin, Harry Elmer	D.C.	B.L.S. 1940, Emory University	D.C.
Irwin, Muri Finner	D.C.	Jackson, Thomas Lester	Pa.
Irwin, Roy William	Md.	Jackson, William Edward, Jr.	Pa.
Irwin, Wade Bryan	D.C.	Jacob, John Brevard	N.Y.
Isaac, Charles Martin	D.C.	Jacob, Phyllis Fileen	
A.B. 1949, The George Washington		Jacobi, George Rudolph	Conn.
University		A.B. 1948, Gettysburg College	Md.
Isaac, Isaac	D.C.	Jacobs, Anne Baird	
A.B. 1940, The George Washington		Jacobs, Arthur Alfred	
University		B.S. 1940, New York University	
Isaacs, Helen Marie	D.C.	LL.B. 1949, The George Washington	
Isaminger, Melvin James	D.C.	University	

Students Registered

459

Jacobi, Jack			
Jacobi, John J.	D.C.	Janney, Tyler	N.Y.
B.S. 1943, State Teachers College,	Pa.	Jansok, Elizabeth Regina	Mich.
Kutztown		Janski, Joseph Andrew	N.J.
M.S. 1947, University of Pennsylvania		Janson, Lars Edward	Va.
Jacobi, Joseph	D.C.	A.B. 1948, The George Washington	
Jacobi, Milton	D.C.	University	
A.B. 1948, The George Washington		Janson, William Clifford	Va.
University		Janssen, William Gilbert	Md.
Jacobi, Morton Clifford		B.S. 1948, St. Norbert College	
B.S. 1942, College of the City of	D.C.	Janssen, William Joseph	N.Y.
New York		Janz, John Alfred	Va.
Jacobi, Sidney Powell, Jr.	Va.	Jaramila, America Canlas	Philippines
Jacobi, Walter William	N.Y.	Jarcho, Harold George	R.I.
B.S. 1944, College of the City of		B.S. in E.F. 1947, Rhode Island State	
New York		College	
A.M. 1940, The George Washington		Jaroma, Frank Gerald	Ohio
University		Jarett, Irwin Meyer	D.C.
Jacobsen, Nancy Jane	Maine	Jarett, Charles Harold	Va.
A.B. 1949, Colby College		Jarett, Harry Beon	Pa.
Jacobson, Andrew	Pa.	B.S. 1972, United States Naval	
Jacobson, Jeanette E.	Iowa	Academy	
A.B. 1944, State University of Iowa		M.S. 1929, Columbia University	
Jacobson, Lindsay Kay	Nev.	Jarvis, Alice Joseph	Mass.
Jacobson, Odd Thomas	N.D.	Jarsh, Verlin Elmer	Ind.
A.B. 1948, The George Washington		A.B. 1947, The George Washington	
University		University	
Jacobson, Wesley Cassel	Iowa	Jaskiewicz, Elizabeth Jane	Va.
A.B. 1939, State University of Iowa		Jaskiewicz, Edward Michael	Cenn.
Jacobson, Harold	Pa.	B.S.E. 1947, University of Connecticut	
B.S. in Ed. 1949, State Teachers		Jaskiewicz, Joseph Adam	N.J.
College, Indiana, Pa.		Jaskiewicz, Joseph Francis	Pa.
Jacobs, Madeline Anne	Ill.	A.B. 1949, The George Washington	
A.B. 1941, University of Illinois		University	
Jacobi, Robert B.	Ohio	Jaskot, Catherine Ann	Vt.
L.B. 1928, Ohio Wesleyan University		Jaskot, John Joseph	Pa.
Jacopke, 1931, Harvard University		Jasper, Estelle Shirley	N.Y.
Jacopke, Arlene Ann	Nebr.	Jasper, James Dudley	Va.
A.B. 1948, Florida State University	Fla.	Jasper, William	Calif.
Jaffe, Eli	D.C.	A.B. 1947, University of California	
Jaffe, Irving	Va.	at Los Angeles	
A.B. 1948, New York University	Md.	A.M. 1949, University of Southern	
Jaffe, Irving Stanley		California	
A.B. 1948, University of Michigan	N.Y.	Jasper, William Randall	Va.
Jaffe, Sidney Abraham		Jas, Andrew Edward	N.Y.
A.B. 1948, The George Washington	N.J.	Jaszczak, Thaddeus Peter	Va.
University		B.S. in E.F. 1949, Newark College of	
Jagbandhamsingh, Alvan Emerson	British West Indies	Engineering	
Jagoe, Armer Louis, Jr.	D.C.	Jaynes, John Thomas	Kans.
Jaimedes, John Joseph	D.C.	Jedrich, Joseph Stanley	Pa.
Jakes, Robert	Tenn.	Jeffers, Albert Laver	Ind.
A.B. 1928, Vanderbilt University		B.S. 1949, Evansville College	
Jakubowski, Hans Hermann	D.C.	Jeffers, John Corbett	Va.
James, Festus Burrell	W.Va.	Jefferson, Jennie Margarette	Va.
James, Frances Pauline	D.C.	Jefferson, Louis William, Jr.	D.C.
James, Gladys Elizabeth	Va.	Jefferson, William Douglas	D.C.
James, Howard Victor	D.C.	Jeffrey, Charles Thomas	D.C.
James, Margaret Lucille	Md.	Jeffrey, Albert Carmie, Jr.	D.C.
James, Mayola L.	Va.	Jeffries, Ardath Elaine	D.C.
James, Paul Marshall	D.C.	A.B. 1949, Mary Washington College	
James, William Valentine	D.C.	Jeffries, Catherine Mary Fieger	Va.
Jamieson, John Franklin	D.C.	A.B. 1948, Baldwin-Wallace College	
Jamprochian Hagop Herach	D.C.	Jeffries, John, Jr.	Va.
A.B. 1949, Clark University	Mass.	B.S. 1947, Harvard University	
Jamison, James Yarrow	D.C.	Jelalian, Ashod	Mass.
Jamison, William Franklin	D.C.	Jelling, Robert	D.C.
Jampel, David Morris	D.C.	A.B. 1941, Brooklyn College	
Jank, Walter Joseph	N.Y.	A.M. 1947, American University	
LL.B. 1947, St. Francis College, Pa.	D.C.	Jelling, William Morgan	D.C.
LL.B. 1947, Catholic University of		Jenason, Dorothy Allen	Gu.
America		Jenkel, Albert Arthur	Iowa
		Jenkel, Martin John, Jr.	Iowa
		Jenkins, Alice Ranche	D.C.
		Jenkins, David Kay	Pa.
		Jenkins, Ernest Joseph	D.C.

Jenkins, Kempton Boyce A.B. 1948, Bowling Green State University	Va.	Johnson, Clyde Daniel Johnson, Clyde George Johnson, Daniel Lyle	Va. Md. W.Va.
Jenks, Loren Morgan, Jr.	Va.	A.B. 1948, Shepherd College	Md.
Jennings, Barnard Fulton B.S. 1948, University of Virginia	Va.	Johnson, Daniel Lynn	D.C.
Jennings, Bonner Parnell	Va.	Johnson, Darrell Edward Holder	Md.
Jennings, Floyd	Md.	Johnson, Donald Holmberg	S.D.
Jennings, James Murray	D.C.	Johnson, Donald Lewis	Md.
Jennings, Lucile Fern A.B. 1948, Michigan State College	D.C.	B.S. in Ch.E. 1947, Purdue University	Va.
Jennings, Marvin Edward, Jr.	Va.	Johnson, Dorothy Louise	Va.
Jennings, Nancy Alice	Md.	Johnson, Douglas Richard	Va.
A.B. 1949, The George Washington University		Johnson, Edward Allen	Md.
Jennings, Nancy Lee	D.C.	A.B. 1947, University of Richmond	Va.
Jennings, William A.	Tex.	Johnson, Edwin Joseph	Minn.
B.S. 1944, M.S. 1945, University of Arizona		Johnson, Elise Hill	
Jenny, Albert	Va.	Johnson, Elizabeth Mae	Md.
A.B. 1940, University of Pennsylvania		A.B. 1947, Carleton College	Md.
Jensen, Carl Axerholm	Md.	Johnson, Elizabeth True	
Jensen, Dinnaemaud Virginia	Md.	B.S. 1943, Maryland State Teachers College, Salisbury	D.C. D.C.
B.S. 1943, Wisconsin State Teachers College, La Crosse		Johnson, Elma Elvera	
Jensen, Jack Monsen	Md.	Johnson, Elsie Nora	Va.
Jensen, Mabel Schauble	Mass.	B.S. 1936, Wilson Teachers College	Md.
Jensen, Willis John	Wyo.	Johnson, Ethel Irma	
B.S. 1947, Pennsylvania State College		Johnson, Eva M.	
Jentile, Ralph Francis	Pa.	A.B. 1949, The George Washington University	Va.
Jentzen, Antoinette Eugenie	D.C.	Johnson, Everett Carl	W.Va.
Jeppson, Shirley Melvin	Utah	Johnson, Francis William	Md.
Jermyn, Eleanor Harriet	Mass.	Johnson, Frank Tracy	D.C.
Jernberg, Dale Leonard	Md.	Johnson, Geraldine Mary	
Jerome, Charles Joseph	N.Y.	B.S. 1947, University of Minnesota	Nebr.
Jessup, Gertrude May	D.C.	Johnson, Helen Lillian	D.C.
Jeter, William Tyree	Okla.	Johnson, Henry Edwin	D.C.
Jewell, Joan Lorey	N.Y.	Johnson, Howard Hamilton, Jr.	
A.B. 1948, The George Washington University		A.B. 1948, The George Washington University	Va.
Jewell, Joseph Thomas	D.C.	Johnson, Howard Odin	
Jewett, John Stanford	Md.	B.S. in Ed. 1934, Wisconsin State Teachers College, Eau Claire	
B.S. 1948, Georgetown University		A.M. in Ed. 1948, The George Washington University	Calif. N.C.
Jewett, Vivian Holland	D.C.	Johnson, Hush Charles	Va.
Jimenez, Doris A.	Puerto Rico	Johnson, James Arthur	Va.
Jivaden, Randolph Lane	W.Va.	Johnson, James Coombs	Pa.
Jobe, Harrel Kent	Tex.	Johnson, James Denton	Md.
Jobe, Howard Lewis	N.C.	Johnson, James Edward	Va.
Johnson, Christine	D.C.	Johnson, James Walter	
Jockusch, Julius W., Jr.	Tex.	Johnson, Janice Mary	
Joel, Clark	D.C.	B.S. 1947, University of Nebraska	Va.
A.B. 1949, The George Washington University		Johnson, John	Va.
Joel, Lambert Savel	Pa.	Johnson, John Sterling	Md.
A.B. 1949, The George Washington University		Johnson, John Vincent	Iowa
Johansen, John Edwin	Ala.	Johnson, Joyce Elizabeth	Md.
Johansen, Robert Howard	Calif.	Johnson, Laura Clare	
Johler, Joseph Ralph	Md.	A.B. 1948, Sweetmore College	Kent.
A.B. 1941, American University		Johnson, Lauren Merle	Va.
John, Harry William	Minn.	Johnson, Lee Reames	Minn.
A.B. 1947, St. John's University		Johnson, Leighton Eugene	
A.M. 1949, Georgetown University		A.B. 1948, The George Washington University	Ohio
Johnnes, Peretz William	Ohio	Johnson, Leslie Addison	D.C.
Johns, Benjamin Irving	Va.	Johnson, Louis Earl	Va.
B.S. 1944, Hampden-Sydney College		Johnson, Louise Glass	D.C.
Johns, Clifford Cyrus, Jr.	D.C.	Johnson, Margaret Elizabeth	Pa.
Johns, Jessie M.	Pa.	Johnson, Margaret Muzum	
Johnson, Andrew Robert	Md.	B.S. in Ed. 1942, Pennsylvania State Teachers College, California	Ala.
Johnson, Ann Ostlund	D.C.	Johnson, Marion Meek	Nebr.
Johnson, Bernard Lee	D.C.	A.B. 1949, University of Alabama	
Johnson, Cecil Davis	Va.	Johnson, Marjorie Mae	
A.B. 1948, University of Kansas City		A.B. 1949, Nebraska Wesleyan University	Md.
Johnson, Charles Christopher, Jr.	D.C.	Johnson, Marjorie Pennington	

Johnson, Mary Kathleen	Pa.	Jones, Claggett Alovisius	D.C.
Johnson, Myles MacCrimmon	D.C.	Jones, Clayton	D.C.
Johnson, Naomi	D.C.	Jones, Cullen Bryant, Jr.	D.C.
Johnson, Norton Steele	Md.	A.B. 1948, The George Washington University	
Johnson, Patricia Gilmore	N.J.	Jones, Darrell Lloyd	Tex.
Johnson, Paul Douglas	N.M.	Jones, David DeLone	Md.
B.S. 1947, University of Southern California		B.S. 1947, Pennsylvania State College	
Johnson, Paul John	Ill.	Jones, David Mason	D.C.
Johnson, Peter Herbert	D.C.	Jones, David Leanne	Va.
A.B. 1948, The George Washington University		Jones, Edwin Brooke	Tex.
Johnson, Ray Carl	Ala.	A.B. 1949, University of Texas	
B.S. 1947, L.L.B. 1949, University of Alabama		Jones, Fred Lee	Va.
L.L.M. 1942, The George Washington University		Jones, Everett Craig, Jr.	N.C.
Johnson, Ray Marshall	N.Y.	Jones, Frank Pierce, Jr.	Tex.
Johnson, Richard Carl	Md.	Jones, Gordon Webb	D.C.
Johnson, Richard Cullen	D.C.	Jones, Harold Llewellyn	D.C.
Johnson, Robert Donald, Jr.	Va.	Jones, Harry Clay	Va.
Johnson, Robert Edward	Iowa	Jones, Harry Lee, Jr.	Mo.
Johnson, Robert Edwin	Ohio	Jones, Helen Betsley	Va.
A.B. 1947, Ohio State University		B.S. 1942, Syracuse University	
Johnson, Robert Glenn	N.Y.	Jones, Helen Reitor	Va.
Johnson, Robert Sumner	Wis.	B.S. in Ed. 1940, Madison College, Va.	
Johnson, Roy Arnold	Md.	Jones, Helen Smart	Va.
Johnson, Ruth Theodora	Minn.	B.S. 1939, Mary Washington College	
Johnson, Stephen M.	D.C.	Jones, Howard Richard, Jr.	D.C.
B.S. 1941, University of Alaska		A.B. 1949, Princeton University	
Johnson, Theodore Robert	D.C.	Jones, Jack Clayton	Okla.
Johnson, Victor Eric	Conn.	B.S. in Ch.E. 1939, Oklahoma Agricultural and Mechanical College	
Johnson, Victor Jerome	D.C.	Jones, James Absalom	D.C.
Johnson, Virginia Mildred	D.C.	Jones, James Frederick	Va.
Johnson, Walter Benjamin, Jr.	D.C.	Jones, James Marshall	D.C.
Johnson, Warren, Louis	D.C.	Jones, James Nelson	Md.
Johnson, Wella Elaine	Md.	Jones, John Norvell	D.C.
Johnson, William Bowman	D.C.	Jones, John Wesley	Md.
Johnson, William Bradlee, Jr.	Pa.	Jones, Joseph Merrill	Ky.
Johnson, William Bruce	D.C.	Jones, Katy Mae	Tex.
Johnson, William Eugene	D.C.	B.S. 1933, Stephen F. Austin State Teachers College	
Johnson, Allen Knight	Iowa	M.Ed. 1946, Southern Methodist University	
Johnson, Doris Jean	Md.	Jones, Merriam Arthur	Va.
Johnson, James Bruce	Va.	A.B. 1931, University of North Dakota	
Johnson, Louise Farmer	Mich.	Jones, Nancy Gene	D.C.
Johnson, Marjorie Anne	D.C.	Jones, Nathan Eugene	D.C.
Johnson, Paul Thomas	D.C.	Jones, Norman Paul	D.C.
B.S.C. 1949, Creighton University		Jones, Robert	D.C.
Johnstone, Richard Charles	Va.	Jones, Robert Ellis	Va.
Johnstone, Elizabeth Caroline	D.C.	Jones, Robert Franks	N.J.
Johnstone, James Bruce	Mich.	Jones, Robert Howard	Va.
Johnstone, Lillian Caldwell	N.C.	Jones, Robert Hudson	Va.
Johnstone, Robert H.	Md.	B.S. 1929, University of Missouri	
Johnstone, William Henry	Mich.	M.S. 1935, Union College and University	
Jones, Oceola Colfield	Va.	Jones, Robert John	Va.
B.S. 1940, Alabama State Teachers College, Florence		A.B. 1949, The George Washington University	
Jones, Alan Garrison	N.J.	Jones, Robert Kay	Va.
Jones, Allen Hughes	N.Y.	Jones, Robert Williams	D.C.
B.M.E. 1948, The George Washington University		Jones, Ruth Bowman	Va.
Jones, Anna Beth	Iowa	B.S. 1936, Madison College	
Jones, Benjamin Perry, Jr.	N.C.	Jones, Ruth Elsie	Tex.
Jones, Bernice Grace	Va.	A.B. 1941, Baylor University	
A.B. 1946, A.M. 1947, The George Washington University		Jones, Ruth Geneva	D.C.
Jones, Calvin Clark	D.C.	Jones, Shirley Marie	Va.
Jones, Carl Thomas	D.C.	Jones, Virginia Walton	Va.
Jones, Charles Clifford	Ark.	A.B. 1941, The George Washington University	
Jones, Chester Morley	Va.	Jones, Walter Warren	Ky.
B.S. in F.E. 1937, University of North Dakota		Jones, William McPheters	Va.
		B.S. 1929, The Citadel	
		Jonascher, Bennett Graham	Va.
		Jonson, Carl Egerton	Va.

Jordan, Fannie Gillespie	D.C.	Kahn, Kalvin	D.C.
Jordan, George Sanford	D.C.	Kahn, A.B. 1948, University of Pennsylvania	D.C.
Jordan, Robert Thomas	Maine	Kahn, Myer Bartel	D.C.
B.S. 1948, Georgetown University		Kahn, B.S. 1948, University of Scranton	D.C.
Jordan, William McRae	N.C.	Kahn, Robert	D.C.
Jorgensen, Florence Gubler	D.C.	Kaiser, A.B. 1945, University of Pennsylvania	D.C.
A.B. 1945, University of Utah		Kaiser, Donald Frederick	D.C.
Jorgenson, James Lewis	Va.	A.B. 1948, North Texas State Teachers College	D.C.
Jose, William III	D.C.	Kaiser, Jesse Albert	D.C.
Joseph, Louis Alan	D.C.	Kaiser, Stanley Mortimer	D.C.
Josephson, Gilbert C.	Md.	Kaiser, Stuart Berwin	D.C.
Joshi, Rajanikant Nilkanthrao	India		
Joslyn, Danforth	D.C.	A.B. 1948, Harvard University	N.Y.
Jost, Helen Marie	Iowa	Kant, Harry Carl	D.C.
Jovanovich, George Stephen	D.C.	B.S. 1948, Temple University	D.C.
L.I.B. 1953, University of Belgrade, Yugoslavia		L.I.B. 1948, University of Newark	D.C.
Joy, Betty Ann	Va.	L.I.M. 1949, The George Washington University	D.C.
Joy, Donald Eugene	D.C.	Katiz, Hyman Benjamin	Mass.
Joy, Helen Maxine	Va.	A.B. 1942, The George Washington University	D.C.
Joy, Robert Allen	D.C.	Kakala, John	D.C.
Joy, Robert Allen	Nev.	A.B. 1949, The George Washington University	D.C.
A.B. 1940, University of Nevada		Kalaska, Janne Swafford	Me.
Joyce, Hilda Lee	Va.	Kalaska, Paul Z.	Me.
Joyce, Martha Radcliffe	Mass.	A.B. 1944, Berea College	D.C.
A.B. 1944, Wellesley College		M.S. 1940, University of Maryland	Ky.
Juarez, Howell Caloway	D.C.	Kalb, Vernon Frederic	D.C.
Juarez, Joe Aracel	Tex.	B.S. 1947, University of Kentucky	D.C.
Jubien, Walter Louis	D.C.	Kallus, Ira	D.C.
Judd, Dean Burnett	Md.	Kalmer, Jack Steven	Conn.
Judd, Howard Caloway	D.C.	Kamrowski, John Edward	N.Y.
Judd, Norman Bruce	Md.	Kalina, Beatrice Josephine	D.C.
B.S. 1943, Springfield College		Kalish, Selma Gottlieb	D.C.
Jenkins, Woodrow Wallis	D.C.	A.B. 1942, A.M. 1944, Ph.D. 1947, University of Kansas	N.Y.
Jenkins, Joseph	N.Y.	Kallman, Beatrice	D.C.
Judy, Phyllis Drew	W.Va.	B.S. 1948, The George Washington University	Me.
Jahan, Dorothy Jean	Va.	Kallmyer, Roy Leslie	Me.
A.B. 1949, Furman University		Kalman, Benjamin	N.Y.
Julecher, Arthur Joseph	D.C.	Kalter, Arthur Martin	D.C.
Julien, Carl Allen	Oreg.	Kalvin, Paul Craig	D.C.
B.S. 1945, University of Washington		A.B. 1948, The George Washington University	D.C.
M.S. 1947, University of Notre Dame		Kam, Oscar	D.C.
Julsson, Mary Rose	D.C.	Kamecka, Maria Henrietta	Ill.
B.S. 1944, University of North Dakota		Kamemoto, Fred Isamu	N.Y.
John, Richard Friedli	D.C.	Kamen, Henry Theodore	D.C.
Juoz, Lucile Margaret	Fla.	Kamukawa, Joseph	D.C.
Jungblut, Edward Wilmont	N.J.	Kamm, Arthur Thorpe	Va.
Jungblut, Helen Odella	N.J.	A.B. 1948, American University	N.Y.
Jorgens, Leo John	Iowa	Kan, Perry Harlan	Mass.
Jonkin, George	Md.	Kananack, Barbara Audrey	Pa.
Justement, Louis, Jr.	Md.	Kane, Daniel Raymond	D.C.
Jylkka, Edward Walter	Mass.	Kane, Frank Michael	D.C.
		A.B. 1949, The George Washington University	N.Y.
K		Kane, Rosemary	S.C.
Kabes, Lillian Esther	D.C.	Kanellon, Constant George	Hawaii
Kaback, Deane, Jr.	Okla.	A.B. 1941, College of Charleston	
Kaczmar, William	Pa.	A.M. 1948, Columbia University	
A.B. 1949, The George Washington University		Kanemoto, Shigetō	Va.
Kafer, Rita	N.J.	A.B. 1949, University of Hawaii	Conn.
Kalovich, Dan George	Mich.	Kaneshiro, Constance Ann	N.Y.
Kallenberger, William Michael	Ill.	Kannenber, Myron Hollis	N.Y.
Kahn, Asher Daniel	D.C.	Kantrowitz, Daniel George	N.Y.
Kahn, Catherine Louise	D.C.	Kantrowitz, Gerald	N.Y.
Kahn, Elizabeth	N.Y.	Kanz, Robert F.	N.Y.
Kahn, Fritz Reiner	Md.	Kao, Laura Ke-Shan	France
A.B. 1948, The George Washington University		Kapitan, Frank James, Jr.	
Kahn, Howard	N.C.	Kaplan, Bertram W.	
A.B. 1940, University of North Carolina		Kaplan, Doris Papillon	
Kahn, Irving	N.Y.		

Kaplan, George	N.Y.	Kassoff, Arthur Irving	N.Y.
Kaplan, Harold Irving	D.C.	A.B. 1946, The George Washington University	Wis.
B.S. 1942, University of Maine		Kasten, Marie Antoinette	Ill.
LL.B. 1948, Harvard University		A.B. 1908, A.M. 1911, University of Wisconsin	
Kaplan, Harry		Katalinich, Mary M.	Minn.
A.B. 1948, The George Washington University		Kates, Raymond Charles	Md.
Kaplan, Jay E.	N.Y.	Kath, Lloyd Louis	Minn.
Kaplan, Louis Charles	Md.	Kator, Irving	N.Y.
A.B. 1944, Yale University		A.B. 1941, University of Michigan	N.Y.
LL.B. 1945, LL.M. 1948, Georgetown University		Katrishen, William	D.C.
Kaplan, Marcia Bry	Md.	B.S. 1948, Mississippi Southern College	N.Y.
A.B. 1949, University of Michigan		Katrivanos, James	N.Y.
Kaplan, Nathan	N.Y.	Katz, Elaine Locuy	Pa.
B.S. 1949, College of the City of New York		Katz, Harry S.	N.Y.
Kaplan, Paul Harold	N.Y.	B.S. 1948, Bucknell University	N.Y.
Kapnick, Philip Raum	D.C.	Katz, Joseph P.	N.Y.
Kappler, Charles Theodore	D.C.	A.B. 1919, College of the City of New York	
A.B. 1942, Yale University		J.D. 1948, The George Washington University	D.C.
Kapriva, Frank Louis	Va.	Katz, Julius	N.Y.
B.S. 1942, Wake Forest College		Katz, Julius Louis	Md.
Kapsanos, William George	D.C.	A.B. 1949, The George Washington University	
Kapuscinski, Wallace John	N.J.	Katz, Lawrence	Del.
Karagiannos, Nicholas Demetrios	Md.	B.S. 1949, University of Denver	Md.
Karavannis, Konstantinos	D.C.	Katz, Leon	N.Y.
Karavannis, Nick John	D.C.	Katz, Morton Harry	N.Y.
Karavannis, Elias Petros	D.C.	Katz, Murray	D.C.
Karch, Ernest Joseph	Wyo.	B.Ch.E. 1947, College of the City of New York	
Karczmarczyk, Edward John	D.C.	Katz, Sara Levit	D.C.
Kardell, Frederick Lloyd	D.C.	B.S. in Ed. 1939, University of Pennsylvania	Va.
Kardos, Alexander Thomas	N.Y.	Kaufman, Shirley Louise	Md.
B.S. in Eng. 1945, College of the City of New York		B.S. 1947, M.S. 1948, University of Chicago	Va.
Kardovich, Nicholas Michael	N.Y.	Kaufman, Herbert	Md.
B.C.E. 1942, College of the City of New York		Kaufman, Lillie	Va.
Kardy, Leonard Thomas	D.C.	Kaufman, Rae Ann	Tex.
LL.B. 1949, The George Washington University		A.B. 1950, Texas State College for Women	
Kardys, Helen Elizabeth	N.Y.	Kaufman, Sidney	Conn.
Karelias, George Andrew	D.C.	Kause, Charlotte Ann	Ohio
Karim, (name in Ali)	Afghanistan	Kavanagh, Ruth Jean	D.C.
Karlene, Michael M.	N.Y.	Kavlick, Raymond Paul	N.I.
A.B. 1944, University of Rochester		Kavruck, Samuel	N.Y.
Karlin, Jack Irwin	N.Y.	B.S. 1947, M.S. 1949, College of the City of New York	
A.B. 1941, The George Washington University		Kawahata, Thomas Tomokazu	Hawai
Karmel, Charles Lewis	D.C.	A.B. 1940, University of California	
Karna, Ross Samuel	Va.	LL.B. 1945, De Paul University	
Karoussatan, Fotis Nicholas	Md.	Kay, Harold Henry	Va.
Karp, Jeanette	Md.	Kay, Joseph	N.Y.
Karr, Lyman Wallace	Wis.	Kay, Marvin Leonard	D.C.
A.B. 1949, University of Michigan		Kaye, Alfred Howard	N.I.
Karsted, Jessie Walton	Fla.	Kaye, Gloria Jean	D.C.
Karstens, Ruth Flora	Va.	Kaye, Norman	Pa.
Karvatt, Robert Charles	Md.	Kaye, Robert Adolph	N.D.
Kaschak, John Michael	Pa.	A.B. 1948, The George Washington University	
Kasius, Richard Volker	Mo.	Kayhoe, Donald Ellsworth	Md.
A.B. 1944, University of Chicago		A.B. 1946, The George Washington University	
M.P.H. 1948, Johns Hopkins University		Kayser, Florence Kathleen	S.D.
Kaslow, Herbert	D.C.	Kayser, Marilyn Elaine	D.C.
Kaspryzk, Laura Joan	N.J.	Kayson, David	D.C.
Kassalow, Sylvia Dicker	Va.	Kazimanskas, Stanley	Ill.
A.B. 1945, The George Washington University		Keahey, William	D.C.
Kassebrum, Robert Gray	Va.	Keane, Thomas Thomas, Jr.	D.C.
Kassenbrook, John Donald	Calif.	Kearin, Helen Marcia	Va.
A.B. 1949, University of California			

Kearney, James Arnold	D.C.	Kelley, Archie Parmelee	Idaho
B.S.S. 1949, Georgetown University		B.S. 1941, United States Naval Academy	
Kearney, Robert Thomas	Colo.	M.S. 1946, Massachusetts Institute of Technology	
Kearney, William Robert	N.J.	Kelles, Charles William	D.C.
Kearns, Thelma Herndon	W.Va.	Kelles, David Philip	D.C.
Kearns, Edmonia Catherine	D.C.	B.S. in P.E. 1940, Lehigh University	Me.
Keating, Mary Dolores	D.C.	Kellen, Frank William	Me.
A.B. 1944, The George Washington University		Kellen, George Rudely	Me.
Keating, Robert Gordon	Va.	Kellen, James John Joseph	Calif.
Keaveney, Donald Charles	Mass.	Kelley, Josephine Ward	
B.S. 1942, Bowdoin College		Kelly, Wallace Ralph	D.C.
Keck, Donald Leavy	Ohio	A.B. 1942, University of California	
Keck, Edwin William	Pa.	A.B. 1948, American University	Va.
B.S. in Ed. 1948, Temple University		Kellison, John Ray	
Kee, Richard Moy	D.C.	B.S. 1941, University of Richmond	Me.
Kee, Robert	D.C.	Kellogg, Ira Newell, Jr.	
Keebler, John Kent	Md.	A.B. 1939, Indiana University	Pa.
Keele, Josie Elise	W.Va.	Kelly, Belle Weinberg	N.J.
Keele, Frances Sarah	Md.	Kelly, Bernard William	Me.
Keefer, Hubert George	D.C.	Kelly, Catherine Burton	
Keegan, Patricia M.	D.C.	A.B. 1939, Smith College	N.Y.
Keeler, Louis Nelson	N.Y.	Kelly, Daniel Francis	D.C.
Keeler, Owen Floyd, Jr.	Va.	Kelly, Dee J.	Pa.
B.S. 1942, United States Naval Academy		Kelly, Edward Joseph	
Keen, Joe Gibson	Tenn.	B.S. 1930, Drexel Institute of Technology	Ill.
Keen, Owen Allen	Va.	Kelly, Edward Thomas	Me.
Keenan, James Wilbert	N.Y.	Kelly, Elizabeth Claudia	
B.B.A. 1941, Manhattan College		B.S. 1941, Pennsylvania State Teachers College, Indiana	D.C.
Keenan, Raymond John	Va.	Kelly, Eugenia Marie	Va.
Keene, Elizabeth Ruth	N.Y.	Kelly, Frances Anne	
Keene, Juanita	D.C.	A.B. 1944, University of Chicago	D.C.
Keener, Wayne Mertz	Pa.	Kelly, Francis Keith	
B.S. 1949, Georgetown University		A.B. 1948, The George Washington University	Pa.
Keery, William John	Md.	Kelly, Harry Joseph	Va.
A.B. 1949, Catholic University of America		Kelly, Jacqueline Patricia	D.C.
Keesey, Marjorie Pennell	D.C.	Kelly, John Joseph	Me.
A.B. 1941, University of Pennsylvania		Kelly, John Leo	
Keesey, Truman Joseph	Md.	B.S. 1947, Georgetown University	Ill.
A.B. 1934, The George Washington University		Kelly, Kathleen Ann	Kan.
Keesling, Harold Charles, Jr.	D.C.	Kelly, Kenneth Max	
Keeter, Charles Pace	Va.	A.B. 1947, Municipal University of Wichita	D.C.
Keeter, Daniel Leavy	D.C.	Kelly, Margaret G.	
Kehoe, Russell Patrick, Jr.	D.C.	B.S. 1941, M.S. 1945, The George Washington University	Me.
Kehoe, Russell Patrick, Sr.	D.C.	Kelly, Philip Thomas	Va.
A.B. 1914, Hanover College		Kelly, Thomas Henry	Me.
Keifert, Robert Noah	Wis.	Kelly, William Daniel	
Keiffer, Sebert Hector	Calif.	Kelsey, David	D.C.
Keil, Armin Theodore	Conn.	A.B. 1942, University of Rochester	
Keister, Richard Edwin III	D.C.	Kemeny, Elizabeth M.	D.C.
Keith, Millard	Mo.	A.B. 1940, Occidental College	Me.
Kekich, Nicholas	Pa.	Kemeny, George Siegfried	
Kellahin, Josephine Dorothy	Md.	Kemer, Frank Conrad	
B.S. in Ed. 1930, Wittenberg College		A.B. 1949, The George Washington University	Va.
Kellam, Donald Swift, Jr.	Va.	Kemmerly, June Dietrich	D.C.
Kelleghan, Gordon Thomas	N.Y.	Kemmerly, Robert Joseph	D.C.
Kelleher, Kenneth Patrick	N.Y.	Kemp, Gordon Glenwood	Pa.
Kelleher, William Vincent	Mass.	Kemp, Henry Werner	Ga.
B.S. 1949, Tufts College		Kemp, Irene Rakestraw	Ga.
Keller, Glenna Isabella	Ohio	Kemp, John Gordon	Md.
Keller, John Christian	Pa.	Kemp, William George	
Keller, Morton	N.Y.	A.B. 1940, The George Washington University	Ill.
B.Ch.E. 1946, College of the City of New York		Kenady, Harold William	Me.
Keller, Raymond Aloysius	Mo.	Kendall, Frank Herbert, Jr.	D.C.
Keller, Ruth Miller	Va.	Kendall, Roberta Marie	D.C.
A.M. 1913, Ohio State University		Kendrick, Elsie Lowe	
Keller, Stewart Theodore	N.Y.		
Keller, Thomas Dixon	D.C.		

Kendrick, John Whitefield A.B. 1937, A.M. 1939, University of North Carolina	D.C.	Kershenbaum, June Bernice	D.C.
Kendrick, Lorcine York	D.C.	Ketstein, Edwin H.	D.C.
Kenkel, Thomas William, Jr.	N.C.	Ketwin, Timothy Daniel	Md.
Kenkel, John Bonaventure	Md.	Keshishian, Harold Mark	D.C.
A.B. 1949, Colgate University		Keshishian, James Mark	D.C.
Kenkel, Mary Teresa	Md.	Keshishian, John Mark	Md.
Kennan, Richard James	Va.	Kessanen, Eino John	D.C.
Kennedy, Alton Oliver	Va.	Kessel, Roy Franklin	W.Va.
Kennedy, Arthur Wallace	N.J.	A.B. 1940, Fairmont State College	
Kennedy, Claire Alvin, Jr.	D.C.	A.M. 1942, The George Washington University	
Kennedy, Donald George	D.C.	Kessell, Laura Maude	D.C.
Kennedy, Gordon, Jr.	D.C.	B.S. 1940, University of Minnesota	
Kennedy, Harold Grant	D.C.	A.M. 1941, Columbia University	
Kennedy, James Anthony	Calif.	Kessinger, Charles Daniel	La.
Kennedy, James Jarvis	Va.	Kessler, Gunther Karl	D.C.
Kennedy, James Joseph	D.C.	Kessler, Virginia Hope	D.C.
Kennedy, Joseph Bernard, Jr.	Va.	B.S. 1948, The George Washington University	
A.B. 1947, LL.B. 1949, The George Washington University		Ketter, William Harry	Pa.
Kennedy, Oliver	D.C.	Kettl, Howard Eugene	Pa.
Kennedy, Robert Joseph	D.C.	Kettles, Harry William	Ga.
Ph.B. 1945, University of Wisconsin		Keyan, Robert Andrews	Va.
Kennel, John Maurice	Ohio	Keyes, Thomas Edward	Va.
A.B. 1948, Miami University		Keys, Carlton Albert	D.C.
Kennelly, Joseph Gerard	N.Y.	Keya, Zella Cox	Va.
Kenny, John Henry	Pa.	Keyser, Ensl Glen	Ohio
Kenny, Katherine Jane	Pa.	Keyser, Hampson Miller	Va.
B.S. 1940, University of Maryland		Keyser, Rhonda Marcia	D.C.
Kenny, Rachel Rebecca	D.C.	Khan, Mohammad Karanattulla	India
Kent, Arthur Peter	Va.	Kibble, Blanche Irene	Colo.
B.S. 1941, The George Washington University		Kibler, Godfrey Lawrence	S.D.
Kent, Charles James, Jr.	Va.	A.B. 1947, A.M. 1944, The George Washington University	
Kent, Jack Howard	Fla.	Kick, Frank Pierce	Va.
Kent, John Louis	Md.	Kizales, Adolphe Charles	D.C.
Kent, Ferrin Aloysius	Mo.	Kidd, Marjorie	D.C.
A.B. 1941, The George Washington University		Kidwell, Carroll Walton	Va.
Kent, Robert Earl	Mo.	Kidwell, Donald Leslie	Md.
A.B. 1949, University of Missouri		Kidwell, Jack Dawson	Va.
Kent, Stephen Garland	Va.	Kidwell, Robert Raffle	Md.
Kenyon, Albert Prentice	Va.	Kidwell, Stanley Slack, Jr.	Va.
A.B. 1929, Milton College		Kiechel, Walter, Jr.	Nebr.
A.M. 1936, Columbia University		A.B. 1941, University of Nebraska	
Kenyon, Daisy Georgetown	Belgium	LL.B. 1949, Yale University	
Kerkes, Nathaniel Colver	Okla.	Kieler, Carl Joseph	D.C.
Kerkes, Richard Earl	D.C.	Kientz, Ernest Joseph, Jr.	D.C.
Kerish, Burton	D.C.	Kier, William Ralph	D.C.
Kern, John Jerome	D.C.	B.S. 1940, Pennsylvania State Teachers College, Indiana	
A.B. 1949, Catholic University of America		Kiernan, Joan Camille	D.C.
Kern, Kenneth Jay	N.Y.	Kiernan, Robert James	D.C.
Kern, Mary Katharine	Va.	Kietur, John Paul	N.Y.
A.B. 1934, Goucher College		Kilburne, Richard Francis	Va.
Kern, Tempie Christine	Va.	A.B. 1948, The George Washington University	
Kerr, Basil John	Wash.	Kilby, Thomas Curran	Md.
B.S. 1949, Georgetown University		Kilday, Martha Vaughn	Ind.
Kerr, Frederic Gerard	D.C.	Killea, Jack Harvey	Wash.
Kerr, Graham Stuckley	D.C.	Kilgour, Henry Bradley, Jr.	Va.
Kerr, Horace Eskew	D.C.	B.S. in M.E., B.S. in E.E. 1948, Virginia Polytechnic Institute	
A.B. 1949, The George Washington University		Kilheffer, Richard Rhoads	Va.
Kerr, Lucille Minton	D.C.	A.B. 1948, Pennsylvania State College	
Kerr, Norma Constance	N.J.	Killam, Matilda Mary	W.Va.
Kerr, Richard Haller	W.Va.	Killian, Rosemary	Calif.
A.B. 1948, West Virginia University		Killian, Thomas Joseph	D.C.
Kerr, Roger Theodore	Va.	B.S., M.S. 1926, Massachusetts Institute of Technology	
Kerr, Thomas Moore, Jr.	D.C.	A.M. 1927, Ph.D. 1929, Princeton University	
A.B. 1940, Lafayette College	Pa.		
Kershaw, John A.			

Killingsworth, Ted Eugene, Jr. B.M.E., 1943, Clemson Agricultural College	Utah	Kinney, David Bowen A.B. 1943, Alma College	Va.
LL.B. 1949, University of Utah		Kinney, Robert Maurice	Va.
Kilpatrick, Grace Jane	Ohio	Kinsel, Alan Edison	Va.
Kim, Grace Mookwangwha	Hawaii	A.B. 1948, The George Washington University	D.C.
Kimball, Orrin Belvin	N.C.	Kinsel, James Nolan B.S. 1944, University of Maryland	P.
A.B. 1949, The George Washington University		Kinsey, William Morrison B.S. 1935, Temple University	Ma.
Kimball, Robert Elwood	Va.	Kinsman, Anne Moore	Ma.
B.E. 1939, Johns Hopkins University		Kinsman, Robert Gordon	D.C.
M.S. 1948, Massachusetts Institute of Technology		Kintslather, David Peter	Pa.
Kimbrough, Mary Jane	D.C.	Kinzer, James Brooks B.S. 1948, Pennsylvania State College	N.J.
Kimbrough, Newman Willingham, Jr.	Ala.	Kip, Ruloff Frederic, Jr. B.S.E. 1944, Princeton University	D.C.
Kinche, Aaron	D.C.	Kipnis, Dolores Etta	Va.
Kimling, Robert Harry	Tex.	Kipper, Henry Haakon	Va.
Kimmel, Charles Thomas	D.C.	Kipps, John William	Conn.
Kimmel, Norton Richard	Md.	Kirby, Edward Francis, Jr. Ph.B. 1937, Providence College	Va.
Kimmel, Vivyan Mary	D.C.	Kirby, Ernest Calvin	D.C.
Kimmerling, Richard William	D.C.	Kirby, Homer Hugh	Tenn.
King, Adelaide Chase	Mass.	Kirby, John Gildersleeve A.B. 1915, University of the South	Ala.
King, Arthur Carl	Conn.	Kirby, Taylor Herman A.B. 1949, Birmingham-Southern College	D.C.
B.S. 1949, Georgetown University		Kirch, Patricia Ann	Ma.
King, Betty Davis	D.C.	Kirchner, Francis Carlyle B.S. 1948, The George Washington University	Va.
King, Carolyn Jean	Va.	Kirchner, Theodore Edmond	Wash.
King, Carolyn Zimmerman	Va.	Kirk, Charles Gilbert A.B. 1941, University of Washington	D.C.
A.B. 1943, Mount Holyoke College		Kirk, Gerald Achilles	D.C.
King, Carpenter Earle	S.C.	Kirk, John Edwin	D.C.
King, Edward George	Md.	Kirk, Michael James	Conn.
King, Elizabeth Rankin	D.C.	Kirkagachulu, Ali Avni	W.Va.
King, Elvina Frances	N.Y.	Kirkbride, Pennell Churchman A.B. 1947, Princeton University	Va.
King, Ernest Lee	Ind.	Kirker, Earl Richard A.B. 1949, Marshall College	Ma.
King, Ethel Virginia Anne	Md.	Kirkland, Robert Carey	
King, Frank Wilson	Va.	Kirkman, Albert Gwinn, Sr. B.S. 1927, Virginia Polytechnic Institute	D.C.
King, Glenn Richard	Md.	Kirkness, Byron Edward	Ma.
A.B. 1948, Gettysburg College		Kirkpatrick, Andrew Hollister	Ma.
King, Harriet S.	Va.	Kirkpatrick, Bernard Joseph	Conn.
King, Henri Hien-Ping	Md.	Kirkpatrick, Charles Albert	
A.B. 1946, Cornell University		Kirkpatrick, James Francis B.S. 1948, Ohio State University	Ma.
King, Horace Leon, Jr.	Md.	Kirkpatrick-Howat, Lauraine E.	Pa.
King, James Cecil	Pa.	Kirley, Peter Herbert	D.C.
A.B. 1949, The George Washington University		Kirsch, Gregory Donald	D.C.
King, Joan Beverly	Pa.	Kirsch, Martin Joseph	
King, John Snyder	Va.	Kirschbaum, Amiel B.S. 1947, University of Maryland	D.C.
King, John Walter, Jr.	Md.	Kirshner, Janet M.	D.C.
King, Joseph Frederick	D.C.	Kirsten, Sidney Leonard	Cal.
King, Morton Lionel	D.C.	Kitasawa, Arthur Saburo	D.C.
King, Mylred Martha	Va.	Kitchen, Jeffrey Coleman B.S. 1943, University of Oregon	Go.
King, Nathan Russell	Md.	Kitchens, William Hansel	D.C.
King, Pericles	Va.	Kitsouli, Michael Thomas	Ill.
King, Phillip M.	N.C.	Kittell, Lawrence Henry	Mass.
King, Quentin Scott	D.C.	Kittle, John Lewis	Mass.
King, Reta Marie	Pa.	Kitts, Louise Melissa	
A.B. 1945, West Virginia Wesleyan College		Kitts, Willard Frederick A.B. 1942, Amherst College	
A.M. 1949, The George Washington University			
King, Richard Francis	D.C.		
Kitae, Richard Paul	Pa.		
Kitae, Robert Erwin	Va.		
King, Ruth Evelyn	Ohio		
B.S. 1942, LL.B. 1935, University of South Dakota			
King, William Alvin	D.C.		
King, William Bruce	D.C.		
Kingsbury, James Calvin	D.C.		
Kingsley, Paul L.	Md.		
B.S. 1947, Northwestern University			
A.M. 1949, University of California at Los Angeles			
Kinmonth, Raymond Arnold, Jr.	Mass.		

Kivitz, Murray Abraham B.S. 1949, New York University	N.J.	Knight, Merrill Davidson III Kinsler, Herbert Vincent Kinsler, Margaret James B.S. 1948, College of William and Mary	Va. Md. Va.
Kizler, John Willis B.S. 1947, Northwestern University	Tex.		
Klasse, Robert Allen	Mich.		
Klatier, Leonard	N.J.	Knodock, Frank Samuel	Va.
Klaybar, Dorothea M.	N.Y.	Knoop, Herman Joseph	D.C.
Klauserman, Mary Josephine	Va.	Knoop, Arthur Maxwell	D.C.
Klapper, Howard Jerome	N.Y.	Knoop, Edna	N.Y.
Klavan, Stanley	D.C.	A.B. 1947, Brooklyn College	
Kel, Thomas Robert	Md.	Kratt, Barbara Elizabeth	Va.
Kear, David Merrill	D.C.	Kratt, Donald LaVerne	Calif.
Klein, Eugene Joseph	D.C.	Kratt, Lucille	D.C.
Klein, Frederick Nelson, Jr.	Mich.	Kratt, William Woodrow	Ill.
Klein, George Ralph	Mass.	Knowles, Edward William	Mass.
Klein, John Richard	Md.	Knowles, Myler Henry	D.C.
Klein, Joseph Samund	D.C.	A.B. 1949, Marian State College	
Klein, Leonard Adam	D.C.	Knowlton, Norma Edith	Iowa
Klein, Morris	D.C.	Knox, David Kayson	Va.
Klein, Robert M. A.B. 1949, The George Washington University	Ohio	Knox, Robert Oremston, Jr. A.B. 1947, The George Washington University	D.C.
Klien, Stanley			
Klein, William Joseph	Mich.	Koach, Joseph Lewis A.B. 1949, The George Washington University	Ohio
Kleishen, Jean Catherine	N.Y.		
Klozo, Julius Matthew	D.C.	Koback, John Merriam	Md.
Klopsk, Philip Harold	N.Y.	Kobenz, Allison James	N.Y.
Kley, Frank Carl, Jr. B.S. 1948, The George Washington University	Va. Md.	Koblenz, Charles A.B. 1949, Central YMCA College, Chicago	Md.
Kline, George John	D.C.	Koch, Dorothy Jane	D.C.
Kline, Jean Louise	Va.	Kochert, Edward Moses	Iowa
Kline, Walter Aaron A.B. 1948, The George Washington University	Va.	Kochler, Joseph Thomas	D.C.
Klika, Raymond Riggs		Koenig, James Louise A.B. 1947, Pennsylvania State College	Va.
Kline, Beatrice Rhoda	Ohio	Koenig, Joseph William, Jr.	D.C.
Kline, Beverly A.B. 1948, Ursuline College, La.	D.C.	Koenig, Marguerite Gordon	Va.
Kline, Elizabeth Anne	D.C.	Koenig, Mary Beth	Va.
Kline, Frederick Elmer, Jr.		Koenig, William Edward	D.C.
Kline, Harold Edward	Md.	Koenigsberger, Charles, Jr.	Mass.
Kline, Ira B.S. 1948, American University	Va.	Kojack, Milton Elwood	Md.
Kline, James Frederick	D.C.	Koester, Edwin Howard B.S. 1947, United States Naval Academy	Conn.
Kline, Paul Arthur	N.J.		
Kline, Ralph Henry	D.C.	Koester, Richard Eugene	D.C.
Kline, Sarah Lottie	D.C.	Koman, Marvin A.B. 1948, A.M. 1949, University of Illinois	Ill.
Klippie, Mary Jane A.B. 1946, The George Washington University	Pa. D.C. Calif.		
Klitzman, Maurice H. B.S. in M.E. 1948, Purdue University	Ohio	Koh, Byung Choll	Korea
Klonowski, Bernard Peter		Koh, Ruby B.	Oreg.
Klorowski, Mary Elizabeth	N.Y.	Kohlman, Frederick Henry B.S. in M.E. 1943, University of Maryland	D.C.
Klossner, John	Pa.	Kohmann, William Alexander A.B. 1949, Southern Methodist University	Wash.
Klosternann, Wolfgang Ekart	D.C.		
Klodahl, Gordon Jacob	Ill.	Kohnen, Harold Albert B.S. 1949, Georgetown University	Ky.
Kloze, Vincent dePaul	Ind.	Kosovian, Andre Vahan	Mass.
Knoch, Maria	Va.	Kokalis, Paul Nicholas B.S. in Ch E. 1944, Worcester Polytechnic Institute	N.H.
Knoop, Harlan Howard, Jr. A.B. 1948, The George Washington University	N.Y. D.C.		
Knecht, Robert William B.S. 1946, Union College and University	N.Y.	Kolb, Dennis Frederick	Md.
Knecht, James Robert		Kolb, Karl Philip	D.C.
Kniazev, Igor Alexis B.S. 1949, Georgetown University	Kans.	Kolb, Raymond Charles	Va.
Kniez, Lucie Esther	D.C.	Kolb, Robert Warren	D.C.
Knight, Anna Flynt A.B. 1948, Mississippi State College for Women	Pa. Miss.	B.S. 1941, University of Maryland	
		Kolchak, Michael	Conn.
		Kolkedy, Joseph George	Ohio
		Kolker, Beverly	D.C.
		Koller, Irvin	D.C.
		Koller, Eugene Sterling	Pa.
		Kollmeyer, Herman Richard	D.C.

Kolodny, Joseph George	D.C.	Koutoulakos, Louis	Va
A.B. 1935, Harvard University		A.B. 1949, The George Washington University	D.C.
Koloma, Peter, Jr.	D.C.	Koutsandreas, Peter Dionysius	D.C.
Kolova, Lilianna	Yugoslavia	B.C.E. 1945, The George Washington University	D.C.
Koltovsky, Lillian Ruth	N.Y.	Kouzel, Howard	D.C.
Komai, Dim	D.C.	Kouzes, Tom	Va
A.B. 1938, University of California at Los Angeles		A.B. 1949, The George Washington University	D.C.
Komito, Milton Feldman	Ohio	Kouznetsoff, Nicolas E.	Pa.
Komito, Renee Freiburger	Ohio	Kovaleski, Jeannie Julia	Conn.
Konhauser, Jerome	N.Y.	Kowalski, Fred Herman	Pa.
Konick, Bernard	N.Y.	Kowalski, Walter Donald	N.H.
B.S. 1945, Brooklyn College		Koviades, Gregory N.	D.C.
Konold, William George	D.C.	Kozak, Walter William	Pa.
B.E.E. 1949, Cornell University		Kozel, Alexander	Pa.
Koo, Yung-chang Anthony	Md.	Kozski, William	Pa.
A.B. 1940, St. John's University, China		Kozlowski, Joseph John	Pa.
M.S. 1941, University of Illinois		Kozlowski, Joseph Paul	Pa.
A.M., Ph.D. 1946, Harvard University		Kraemer, Thaddeus Charles	Pa.
Koole, George Grayson, Jr.	Va.	Kraemer, William F.	Va.
Koosman, William, Jr.	Minn.	A.B. 1932, University of Delaware	Md.
Koons, David Anthony	Pa.	Kraft, Lester	D.C.
Koons, George Hill	D.C.	A.B. 1948, University of Maryland	D.C.
Koons, Robert Aaron, Jr.	Pa.	Kranick, John Joseph	Va.
Koons, Walter Benjamin	Pa.	Krakov, Morton Joseph	Va.
Koonts, Robert Henry	N.C.	Kraller, John Edward	D.C.
B.S. 1942, University of North Carolina		Kramer, Carl Aaron	D.C.
Koosis, Isola Angela	Va.	Kramer, David Russell	N.Y.
A.B. 1943, The George Washington University		Kramer, Joshua	Va.
Kooy, Herman Peter	N.J.	Kramer, Marvin Lewis	D.C.
Kopacka, Lorraine Mae	Ohio	Kramer, Norman Clifford	Va.
Kopek, John Longin	N.Y.	B.S. 1948, The Citadel	Va.
Kopman, Thomas Vincent	D.C.	Kramish, Arvin Morris	
Koplin, Allen Atlas	D.C.	A.B. 1947, A.M. 1949, University of Denver	D.C.
Koplovitz, Rose	Pa.	Kranarcy, Julia Helen	Pa.
Kopp, Paul Joseph	Va.	Krasley, Paul Albert	D.C.
A.B. 1934, Lehigh University		Krasny, John Friedrich	Ohio
A.M. 1937, Duke University		B.S. 1948, University of Denver	Md.
Koppelman, Irvin Jerome	Va.	Kratt, George Christian	Va.
Koppelson, Florence	Md.	Kraus, Harriet Hill	Conn.
Kordish, Joseph Edward	D.C.	Kraus, Robert John	
Koren, Gerd Elise	Norway	Krausman, William James	Ill.
Korenblatt, Martin A.	N.Y.	B.S. 1949, Georgetown University	D.C.
Korff, James Leeroy	Va.	Kraut, Joseph William	D.C.
Korkmas, Joseph Kalell	Tex.	Kraut, Sylvester Gregory	Md.
Korn, Norman	N.Y.	A.B. 1949, Georgetown University	Ont.
Korn, Seymour	N.Y.	Kravetz, Herman	
Kornblatt, Julius	N.Y.	Krebs, Frances Jeanne	D.C.
Kornhauser, Alvin	D.C.	B.S. 1948, University of Oregon	
Korostoff, Bernard	N.Y.	Krebs, Henry Charles	D.C.
Kortman, Cecil M.	Tex.	A.B. 1949, The George Washington University	D.C.
Koshkin, Lona McNeill	Ala.	Kreek, Louis Francis, Jr.	
Kosmerl, Alice Frances	Ohio	B.S. 1948, Massachusetts Institute of Technology	Minn.
A.B. 1947, Seton Hill College		Krefting, James Emmett	Ohio
A.M. 1948, Ohio University		Krehbiel, Mary Lou	
Kost, Marilyn Helen	Mo.	A.B. 1946, The George Washington University	Md.
Kostelic, Albert Anthony	Colo.	Kremen, Jerome	Calif.
A.B. 1940, Western State College of Colorado		A.B. 1948, Johns Hopkins University	
Koster, Teresa Mary	D.C.	Kremer, Harry Darwin	D.C.
Kostik, Peter James	Ohio	B.S. 1937, University of Kentucky	Md.
A.B. 1949, The George Washington University		Krentlin, Julie Anita	Va.
Kostin, Nina J.	D.C.	Kreslev, Clement D. J.	
Kotarski, Christine Ann	Mich.	Krichmar, Robert Lawrence	D.C.
Kotz, Herbert Louis	D.C.	A.B. 1943, Boston University	
Kouri, Mary Ann	N.Y.	Krick, Lillian	
A.B. 1946, Columbia University		B.S. in Mus. 1935, University of Illinois	
Koury, Eaver Moosa	Lebanon		
Koustenis, Harry George	Ohio		

Krieger, Henry Norbert A.B. 1948, Stanford University	Ill.	Kutach, Stephen William A.B. 1942, The George Washington University	Pa.
Kriemelmeyer, Harry	D.C.	Kunz, George Emil	D.C.
Krikorian, Gato	N.J.	Kunz, George Theodore	Fla.
Kriner, George Marion	D.C.	Kunz, Karl Michael	R.I.
Krist, Fred George	N.Y.	Ph.B. 1941, Providence College	
Krist, Barbara Tanya	D.C.	L.L.B. 1947, Georgetown University	
Krivoy, Harold Lloyd	Utah	Kupiec, Chester Francis	Va.
Krivoy, William Aaron B.S. 1948, Georgetown University M.S. 1949, The George Washington University	D.C.	Kupinsky, Marnie B.S.S. 1949, College of the City of New York	D.C.
Krizay, John	Ky.	A.M. 1947, New York University	
Krop, Alexander	D.C.	Kupka, Anthony	Md.
Kroger, John Francis B.S. 1933, Catholic University of America	Md.	B.S. 1932, Ithaca College	
Kroll, Casimir Thaddeus A.B. 1947, St. John's College	Va.	Kupperman, Morton B.S. 1918, College of the City of New York	N.Y.
Kroll, Henry August A.B. 1934, Carnegie Institute of Technology	Md.	Kurech, John R.	D.C.
Kroll, John Henry	D.C.	B.S. 1948, University of Pittsburgh	Calif.
Kroll, Lina Alberta	Minn.	A.B. 1946, University of Washington	
Kroner, Albert Mall	D.C.	Kurkian, Badrik Mulsolm B.S. 1943, Massachusetts Institute of Technology	Mass.
Kroner, Lawrence Roy	Ill.	Kursat, August B.S. in Ed. 1939, Rutgers University	N.J.
Kronstadt, Nathan	N.Y.	A.M. 1949, Columbia University	
Krusynski, Margaret E.	Pa.	Kursch, Robert Francis	D.C.
Krueger, Harold Matthew	N.Y.	Kurtz, Kenneth Ray	D.C.
Krueger, John Richard A.B. 1948, The George Washington University	D.C.	Kurtz, Stanley Morton B.S. 1949, The George Washington University	D.C.
Krupa, Andrew B.S. 1929, Chicago Technical College	Va.	Kurtz, William Louis	Va.
Krupovich, Helen Marie	Pa.	Kurtz, Philip Eledge B.S. 1942, University of Maryland	D.C.
Krychinski, William	Md.	Kushman, Hollis Kent	Md.
Krywiski, Lenore	Pa.	Kushman, Howard Bert	Ohio
Krzanowicz, Leo Alexander	N.Y.	Kusumoto, Earl Hinaishi	Hawaii
Ksando, Charles Fernand B.S. 1941, University of Maryland	D.C.	Kuta, Richard Aloysius	D.C.
Kuba, Irene Margaret	Pa.	Kuter, Roxanne	D.C.
Rubach, Dorothy Lash Elaine	D.C.	Kutz, Judith	D.C.
Rubart, Sandra E.	Minn.	Kutz, Laverne Anthony	Mo.
Ruchler, Ralph Rudolph A.B. 1948, LL.B. 1949, The George Washington University	D.C.	Kuzminsky, Carl	D.C.
Rudatsky, Nathan	D.C.	Kyle, Hugh Campbell, Jr.	D.C.
Rudlak, Genevieve	D.C.	Kyne, Peter John	D.C.
Rulish, Morton	N.Y.	Kyriazis, Chris William A.B. 1948, The George Washington University	Md.
Rulish, Louis Millicent	Va.	Kyriazis, Peter William A.B. 1949, The George Washington University	Md.
Ruelmet, Grayson Lynn B.S. 1949, University of Arkansas	D.C.	Kyse, Warren Edward	N.J.
Ruey, Charles F.	D.C.	Kytile, Stuart Frederick A.B. 1948, The George Washington University	Md.
Rub, Mimi	D.C.		
Rubi, Arthur M.	D.C.		
Rubi, Earl Henry	Mont.		
Rubi, George Charles	Iowa		
Rubi, Mark Joseph	Va.		
Ruddell, Clarence Elliot	D.C.		
Rulina, Mark Robert	D.C.		
Rulish, Joseph Thomas	Pa.		
Rulish, Matthew William	Pa.		
Rull, Hale Margaret	Pa.		
Rulla, A. Lincoln Acker	N.Y.		
Rulp, John Wesley	D.C.		
Rulp, Russell Nyce, Sr.	D.C.		
Rulard, Eyvind Loring	Md.		
Romagai, Rikio B.S. in Ch.E. 1948, University of Michigan	D.C.		
Rumber, Albert Henry	D.C.		
Rump, Jack Maurics	D.C.		
Runda, Walter	N.Y.		
Rune, Bernard Jack	D.C.		

L

Labanski, Stephen Bronislaw	Mo.
LaCarruba, Michael Angelo A.B. 1948, Brooklyn College	N.Y.
Lacey, Hubert Nathaniel	Nebr.
Lacey, Kenneth King	Tenn.
Lacey, Maurice Winters	D.C.
Lacey, Robert Thomas	D.C.
Lacey, Wilma Garner	Va.
Lachman, Erwin John B.S. 1947, University of Pennsylvania	N.Y.
Lachman, Jerome Edwin A.B. 1939, New Jersey State Teachers College, Upper Montclair	N.J.
Lackey, Joseph Henry, Jr.	Va.

Lacombe, Charles Herbert	D.C.	Lambros, Veneta Virginia	MD
Lacombe, Harold	D.C.	B.S. 1941, Maryland State Teachers	
Lacovara, Nicholas John	N.J.	College, Towson	
LaCovia, Mary Anne	D.C.	Lamkin, James Cecil, Jr.	Min.
Lacy, Patricia Ann	Va.	B.S. 1948, The George Washington	
Ladd, Culver Sprogle, Jr.	MD.	University	MD.
Laditsky, Bernice Edythe	N.Y.	Lamore, Donald Hart	
Ladue, Harry	N.J.	A.B. 1948, University of Maryland	D.C.
Lafferty, Frances Hazel	Del.	Lamott, Dorothy Wyles	W.V.
Lafferty, Jerry Dean	Calif.	Lamp, E. Jean	ME
Laffey, Cyril Joseph	MD.	Lamplacat, Donald E.	ME
A.B. 1949, The George Washington		Lamson Scribner, Meroy Dees	D.C.
University		Lansing, William Henry, Jr.	Pa.
Laffin, Edward John	Calif.	Lancaster, Blake Paul	Mass.
Laffin, Mark William	D.C.	Lancaster, R. Kent	
Lafotis, Nicholas	Mass.	B.S. 1948, Mississippi State College	ME
LaFleur, Arlene Mary	N.Y.	Lancaster, Robert E., Jr.	D.C.
A.B. 1949, University of Buffalo		Lamckson, Myrtle Ann	Va.
LaFrance, Anna Egan	N.J.	Landau, Morton	
A.B. 1948, The George Washington		A.B. 1947, The George Washington	
University		University	NY
LaFrank, Juan Tagliavia	Va.	Landau, Sherman	
A.B. 1938, University of Pittsburgh		B.S.S. 1948, College of the City of	
Laparde, William Joseph	Va.	New York	NY
Lapathier, Robert Bosso	Minn.	Landen, Richard Magnus	GI
Lapier, Walter Waldraff	N.Y.	Lander, Miriam Jones	
A.B. 1949, The George Washington		A.B. 1945, University of South	
University		Carolina	Va.
Laromarcina, Paul Donald	Ill.	Landes, Hazel Cline	
A.B. 1948, State University of Iowa		B.S. 1939, Madison College	
LL.B. 1949, The George Washington		Landing Miramla, Jorge Luis	Puerto Rico
University		A.B. 1949, Florida Southern College	MD
Lagory, Richard Marion	D.C.	Landis, Harry Campbell	D.C.
Lahox, Patricia Ann	MD.	Landis, Joseph Winney	Va.
Lahm, Robert John	Pa.	Landolt, Raymond Eugene	D.C.
Laine, Hugh Carter	Va.	Landon, Gladys King	ME
Laine, Roland Oscar	Va.	Landry, Sara Yvonne	Fla.
Larnof, Milton	N.J.	Landsman, Helen Ruth	D.C.
Larnof, Robert Ivan	Va.	Landsman, Louis	Va.
B.S. 1949, University of North		Landsman, Robert Samuel	D.C.
Carolina		Landsman, Zelda Rosen	Tenn.
LaLande, Allen Lee	Tex.	Lane, Daiten Creed	
Lally, Paul Thomas	Pa.	A.B. 1947, Berea College	D.C.
Lalush, Basil	Pa.	Lane, Elizabeth Christine	Va.
B.F.E. 1949, Catholic University of		Lane, Elizabeth Mary	D.C.
America		Lane, Elizabeth Walker	D.C.
LaMacchia, Frank Richard	MD.	Lane, Francis Edward	ME
A.B. 1945, The George Washington		Lane, Jeremiah Michael	D.C.
University		Lane, John McAllister	
LaMaster, Virginia Ann	Ill.	B.C.E. 1947, The George Washington	
Lamb, Denny Virginia	Ga.	University	Ten.
Lamb, Harold Moore	MD.	Lane, Mary Catherine	Va.
B.S. 1944, United States Naval		Lane, Munson Hanson, Jr.	
Academy		B.S. 1948, Emory and Henry College	Ohio
Lamb, Paul Clarence	MD.	Lane, Ralph Hoover	
Lambert, Francis Lincoln	D.C.	A.B. 1929, Capital University	
B.S. 1949, The George Washington		A.M. 1933, Ohio State University	
University		Ph.D. 1946, The George Washington	MD
Lambert, Lillian Merle	Va.	University	D.C.
B.S. 1934, Madison College		Lane, Rosemary Jeannette	
Lambert, Margaret Lucille	Va.	Laney, Arthur R., Jr.	
Lambert, Marie Bohrm	D.C.	A.B. 1947, A.M. 1949, The George	
A.B. 1943, Hunter College		Washington University	MD.
A.M. 1945, Columbia University		Laney, Culbert	
Lambert, Peter Baldwin	D.C.	B.S. 1941, Utah State Agricultural	Fla.
Lambert, Robert Johnston, Jr.	Ark.	College	
Lambert, Robert Lyman	D.C.	Lanford, Horace Whaley, Jr.	Fla.
Lambert, Robert Warren	D.C.	B.B.A. 1948, University of Georgia	
A.B. 1943, DePauw University		Lang, Edward Alexander	
Lambert, Ruth Garner	Ark.	B.S. in B.A. 1945, University of	
Lambright, Ethel Pauline	Miss.	Florida	
A.B. 1933, Mississippi College			
Lambros, John William	D.C.		

Lang, John Carl	S.D.	Larson, Robert Edwin	N.Y.
A.B. in Ed. 1936, State Teachers College, Valley City, N.D.		Larson, Robert LeRoy	Mont.
A.M. 1949, The George Washington University		A.B. 1949, Montana State University	Ill.
A.M. 1949, Northwestern University		Larson, Ruth Louise	
Lang, John Christian	Ill.	A.B. 1946, Carleton College	Ind.
Lang, Ruth Eleanor	Va.	Larson, Walter Infusa	D.C.
B.S. 1949, Teachers College of Connecticut		LaRue, Mary Virginia	D.C.
Langenbeck, Earl Henry	Md.	LaRue, Robert Emmett	Wis.
B.S. in C.E. 1944, University of Missouri		LaSage, Phillip Iron	
Langerman, Elaine Mildred	D.C.	A.B. 1948, Colorado College	N.Y.
Langford, John Walter	Wyo.	Lasher, Clayton	Pa.
Langley, Harold David	D.C.	Lasher, Jay Donald	
Langlo, Alphonse James	Mass.	B.S. 1949, University of Pittsburgh	Ga.
A.B. 1947, The George Washington University		Lashley, Louis Pickens	D.C.
Lang, George Edward	N.Y.	Lasky, Raymond	D.C.
A.B. 1948, Union College and University		Lasley, Donald Gray	Calif.
Lano, Lonnie Jane	Minn.	A.B. 1949, Duke University	
Lanosz, Michael	Pa.	LaSpada, Jack Anthony	
Lansing, Edward Watson	Mo.	B.S. 1941, United States Naval Academy	
LaPier, James Benonic	R.I.	M.S. 1946, Massachusetts Institute of Technology	N.C.
Lapham, George Sealy	Ga.	Lassiter, Emily Ware	Va.
Lapin, Paul Michael	N.Y.	Lassiter, Robert Putman	D.C.
Lapp, Hazel Williams	Md.	Latham, Royce	Md.
B.S. 1944, Ohio State University		Lathan, William Clark	
M.S. 1949, University of Chicago		A.B. 1944, Maryville College, Tenn.	Va.
Lappin, John Eldridge	D.C.	Latham, Leslie Wade	
Lappin, Robinson	D.C.	A.B. 1947, Miami University	
Laprade, Gertrude Cecelia	N.Y.	A.M. 1949, University of Cincinnati	Va.
A.B. 1949, Brown University		Lathrop, Richard Payne	Mass.
Larimore, Theodore Russell	Md.	Latino, Jennie Mary	N.Y.
B.S. 1928, Indiana University		LaTorre, Richard Robert	Va.
M.S. 1941, University of Illinois		LaTorre, Vincent Thomas	R.I.
Ph.D. 1948, University of Nebraska		Latus, George Christ	
Larson, Oliver Kautler	Md.	Latt, Benjamin	
A.B. in Ed. 1949, The George Washington University		A.B. 1948, Brown University	D.C.
Larson, William Joseph	N.Y.	Latta, Daniel Wendner	D.C.
Larkin, Alfred Joseph	N.Y.	Latta, James Clay, Jr.	W.Va.
B.S. 1929, Colgate University		Lattimer, Patricia Ann	
Larkin, Daniel Franklin, Jr.	R.I.	A.B. 1949, West Virginia University	Hawaii
Larson, Margaret	D.C.	Lau, Stanley Ying Chan	N.Y.
Larmon, Elizabeth Angle	Ky.	Laufeross, Marvin	Md.
A.B. 1948, Western Kentucky State Teachers College		Lauder, Frank Herbert	D.C.
LaRocca, Marie Barbara	N.Y.	Lauder, Lawrence Edwin	Kans.
B.S. 1949, The George Washington University		Lauk, Robert Gerald	
Larick, Benjamin Franklin	Va.	A.B. 1949, Municipal University of Wichita	
Larick, Dorothy Marcela	Kans.	Lauder, Robert Bruce, Jr.	N.Y.
A.B. 1948, The George Washington University		Laughery, Elsie Florence	D.C.
Larick, Louis Cummings	Va.	Laughlin, Charles Russell	Va.
Larick, Mary Lois	Kans.	Laughlin, John Gregory, Jr.	Kans.
A.B. 1946, The George Washington University		Laughlin, Richard Thomas	N.Y.
Larsen, Morris Alven	Iowa	B.S. in Ch.E. 1940, University of Notre Dame	
Larson, Charles Oscar	Va.	Laughmiller, Roy William, Jr.	Tenn.
B.S. 1926, United States Naval Academy		A.B. 1947, Maryville College	
Larson, Colleen Mildred	Mont.	Laurence, Edwin Anthony	Pa.
Larson, David Maurice	Md.	Lavagnino, Geraldine Sinclair	D.C.
Larson, Donald Eugene	Minn.	Lavine, Estelle	Md.
Larson, Miriam Kathleen	N.D.	A.B. 1941, The George Washington University	
A.B. 1945, Concordia College, Minn.		Lavine, Irvin Arthur	Va.
Larson, Milton Arvid	Utah	B.A.F. 1947, Catholic University of America	
Larson, Richard Eugene	Mont.	Law, Anna Mae	N.Y.
		Law, Mary Agnes	D.C.
		B.S. 1941, Mississippi Southern College	
		Law, Susan Bandella	D.C.
		Lawbosky, Barbara	Pa.
		Lawless, William Josselyn, Jr.	Va.
		Lawlor, Henry William	D.C.

Lawrence, Derek Peter B.M.E. 1948, Clarkson College of Technology	N.Y.	Leckie, Jack B.S. 1938, Marshall College	W.Va.
Lawrence, Dorothy Duncan B.S. 1937, George Peabody College for Teachers	Va.	Ledbetter, Archibald Clarence Ledbetter, Julia Elizabeth A.B. 1944, The George Washington University	Md. Miss.
Lawrence, Frank Edward Lawrence, Lester Albright, Jr.	D.C.	Lederer, Lois Elsie Ledesma, Consuelo Pablo	D.C. Philippines
Lawrence, Malcolm A.B. 1948, The George Washington University	Va. D.C.	BS in Ed. 1948, University of the Philippines	Philippines
Lawrence, Robert Anthony Lawrence, Robert Prentice	Md. Conn.	Ledoux, William Adelard LeDuc, Philip Sheridan, Jr.	Mass. Mass. N.C.
Lawrence, Roger, Lee B.S. 1941, Ohio State University	Ohio	Lee, Alma Raines A.B. 1947, East Carolina Teachers College	
Lawrey, George Alan Lawson, Adrian Lee	D.C. Va.	Lee, Belva B.S. 1939, Brigham Young University	Idaho
Lawson, Alfred Brett, Jr.	Conn.	A.M. 1948, Columbia University	D.C.
Lawson, Alice Joyce	N.Y.	Lee, Carolyn Thorpe	D.C.
Lawson, Howard Birger	Va.	Lee, Dorothy	Tex.
Lay, Mary Wilma	Miss.	Lee, Emil Weldon B.S. 1948, Georgetown University	Colo.
Layne, Ennis Cecil	Va.	Lee, Harriet S. A.B. 1933, Ohio Wesleyan University	China
Layne, Phyllis Coffey	D.C.	Lee, Hei Kit	Va.
Layne, Virginia Ellen	Pa.	Lee, Helen	D.C.
Layton, Cleo Franklin	D.C.	Lee, James Roosevelt A.B. 1947, University of Pennsylvania	D.C.
Lazas, Donald Joseph	Pa.	Lee, Julia McEachin A.M. 1941, The George Washington University	D.C.
Leabhart, John William, Jr.	Minn.	Lee, Lily Kwai Keui B.S. 1949, The George Washington University	D.C.
Leach, Daniel Joshua B.S. 1938, University of Minnesota		Lee, Lloyd Wilson	D.C.
Leach, Frank Clay, Jr. B.S. in M.E. 1947, University of Kentucky	Ky.	Lee, Murray Kent	Va.
Leach, Patricia Hughes	Wis.	Lee, Paul D. K.	Hawaii
Leader, John Louis B.S. 1940, Canisius College	N.Y.	Lee, Randolph Wilbur A.B. 1947, University of Colorado	S.D.
LL.B. 1949, Georgetown University	Pa.	Lee, Raymond B.S. in I.E. 1948, Pennsylvania State College	N.Y.
Leader, Samuel Freece	Pa.	Lee, Robert B.M.E. 1949, The George Washington University	D.C.
Leahy, Ruth Anne	Pa.	Lee, Shiu Lam	D.C.
Leahy, John Joseph, Jr.	D.C.	Lee, Stanley Jerome	N.Y.
Leahy, William Crahan A.B. 1944, University of Pennsylvania	D.C.	Lee, Virginia Taylor	D.C.
Leamy, Agnes Garrett	D.C.	Lee, William M.	D.C.
Leapley, William Trudgeon B.S. 1943, Western Michigan College of Education	D.C.	Leech, Gladys Gertrude	Va.
Lear, James Richard	D.C.	Leech, Walter Murray A.B. 1949, The George Washington University	D.C.
Lear, Jeanne Eleanor A.B. 1947, American University	D.C.	Leer, James Edward	D.C.
Lear, Joyce Elizabeth	Mich.	Leetch, William Dougal, Jr.	N.H.
Learman, John Frank	Ark.	Lefebvre, George Pierre	D.C.
Leary, James Edward A.B. 1948, Duke University	Mass.	Lefer, Samuel	Pa.
Leary, John Patrick	Mass.	Lefingwell, Thomas Cullen	N.Y.
Leary, Norma Ellena	D.C.	Lefkowitz, Saul B.S.S. 1949, College of the City of New York	D.C.
Leary, Patrick James	D.C.	Leftwich, Frances Walton	Va.
Leary, Robert George	N.Y.	Leftwich, Helga Neuhaus	Va.
Leas, Florence Ann	D.C.	Leftwich, William Edward A.B. 1921, Randolph-Macon College	Va.
Leasure, James Edward	D.C.	Legum, Howard Isadore A.B. 1943, Harvard University	Va.
Leatherwood, James Hubert	Va.	Lehman, Ann Cecilia	Pa.
Leavitt, Raymond Boomer B.S. 1933, United States Naval Academy	D.C.	Lehman, Paul Allen	Va.
Lebergott, Ruth W. A.B. 1940, University of Michigan	D.C.	Lehnert, Robert Conrad	N.Y.
LeBlanc, Joseph Lenol	D.C.	Lei, Chih Tseng B.L. 1940, National Peking University, China	China
Lebovitz, Carl Harry A.B. 1946, Bowdoin College	Va.		
Lebowitz, Anne Theresa	Md.		
Lebrecht, Richard	N.Y.		
Lechner, Naida Marjorie	S.D.		
Leckband, Paul	Iowa		

Leibbrandt, Robert Clinton	Kans.	Leaniak, William Walter	Va.
Leich, Mary Townley	Va.	Lesser, Robert George	Mass.
Leichter, Jerome Raymond	N.J.	Lessuk, Gerald H.	N.Y.
Leidinger, Joan Mary	D.C.	Lester, Edwin	D.C.
Leigh, Cecilia Beiser	Va.	B.E.E. 1949, Rensselaer Polytechnic Institute	
Leigh, Mildred Maitland			
B.S. 1932, College of William and Mary		Lester, Frances Grigsby	Va.
Leighton, Virginia Cecil	D.C.	B.S. 1945, Madison College	
Leikari, Kenneth Arvi	N.J.	Lester, Frank John	Va.
Leikari, Vicho Raikas	N.J.	Lester, John William	Okla.
Leimbach, Dorothy Gmlbois	D.C.	Lotts, Kenneth Pearle	Mch.
A.B. 1945, Brown University		Louise, George Buck	D.C.
Leimbach, Leonard LaSalle	D.C.	Levant, Greta Atkin	D.C.
A.B. 1946, Brown University		Levant, Emma Rose	Mass.
LL.B. 1948, The George Washington University		LeVogue, Frederick Will	Ohio
Leimbinger, Frederick William, Jr.	Ohio	Lever, Irene Helen	D.C.
Leimbach, Chapin Raffner	Va.	Levering, Elizabeth Burton	Va.
A.B. 1936, Dartmouth College		Leverington, Richard Dean	Iowa
Leins, Charles Olaf	N.Y.	Leverone, Harry William, Jr.	D.C.
Leiper, Mary Rita	Md.	Levette, Hanna	Ill.
B.S. 1937, Wilson Teachers College		Levi, Garnett William	Va.
Leishman, Merlin Ricks	Utah	Levillan, Wayne Dewitt	D.C.
B.S. 1939, Utah State Agricultural College		Levin, Bernard	D.C.
Leister, Raymond Charles	Pa.	Levin, Charlotte Ruth	D.C.
Leith, Carroll Irvin, Jr.	Va.	Levin, Haskell	D.C.
B.S. 1938, Virginia Polytechnic Institute		Levin, Henry Max	D.C.
Leith, Theodric Hulton	Va.	Levin, Irving	N.J.
B.S. 1949, University of Maryland		Levin, Isaac	N.Y.
Leitz, Robert Zane	Md.	Levin, Jacob Solomon	D.C.
Leitz, Robert Henry	Ill.	LL.B. 1949, The George Washington University	
LeMay, Mary Elizabeth	D.C.	Levin, Joseph	Md.
Lenelman, Ruth	D.C.	LL.B. 1949, The George Washington University	
Leney, Raymond Ephraim	Ill.	Levin, Joseph	D.C.
Lenmon, Charles Raymond	La.	Levin, Mark	Ill.
Lenmon, Kenneth Thomas	N.Y.	B.S. in Ch.E. 1948, Princeton University	
Lenmon, Tony E.	Ind.	Levin, Philip	Md.
Lemon, Edythe Jewel	Mich.	Levin, Philip Paul	D.C.
Lemons, F. Ted	Va.	Levine, Alfred Bernard	N.Y.
Lenarduzzi, David Rino	D.C.	B.S. in E.E. 1946, Cornell University	
A.B. 1948, The George Washington University		M.E.E. 1949, Rensselaer Polytechnic Institute	
Lenemann, Ernest Charles, Jr.	Va.	LeVine, Carl Ralph	Mich.
Lenman, Alvin Brooks	Md.	B.S.E. 1936, M.S.E. 1938, University of Michigan	
Lennox, Mary	D.C.	Levine, Deena Ostrolenk	Va.
Lenoff, Monroe	D.C.	B.S. in Ed. 1947, Adelphi College	
Lentz, Marcette Agathe	Pa.	Levine, Grace Flax	N.Y.
Lentz, Walter Scott, Jr.	D.C.	Levine, Irving	Md.
Leo, Albert Louis	N.Y.	Levine, Irving Seth	N.Y.
A.B. 1948, Catholic University of America		B.S. 1941, M.S. 1941, Massachusetts Institute of Technology	
Leon, Grace Veronica	N.J.	Levine, Samuel	N.Y.
Leon, Mary Angela	Ohio	A.B. 1946, Brooklyn College	
Leonard, Charles Richard	Tex.	Levine, Saul	N.Y.
Leonard, Ethel Louise	D.C.	Levine, Thelma	D.C.
A.B. 1948, The George Washington University		Levinson, Arnold Seymour	Va.
Leonard, Eugene Anthony	Va.	Levinson, Cynthia Tyor	D.C.
Leonard, Orel Klein	D.C.	Levinson, Irving	Ill.
A.B. 1949, The George Washington University		B.S. 1949, Central Y.M.C.A. College, Chicago	
Leonard, Thomas Erle	Minn.	Levinson, Lawrence Stanley	N.Y.
LePew, Patricia Mellon	Md.	B.S. 1948, Rutgers University	
LePore, William August	W.Va.	Levinson, Rose Golda	D.C.
Lerner, Esther B.	D.C.	Levinson, Daniel	D.C.
Lerner, Nathan Harold	D.C.	Levy, Barbara Jeanne	D.C.
Lerner, Theodore Nathan	D.C.	Levy, Charles Kingsley	D.C.
Lerrera, John Lindy	D.C.	B.S. 1948, The George Washington University	
Lesage, Roland Joseph	N.H.	Levy, Donald	D.C.
Lesie, Annmarie Beverly Faulkner	N.C.	LL.B. 1947, University of Maryland	
Leslie, Charles Walton, Jr.	Ind.		
Leslie, John William			

Levy, George	Mass.	Lewitz, Marian	D.C.
A.B. 1949, The George Washington University		Leydon, James Andrew	Mass.
Levy, Harry	N.J.	Leyen, Femina Wouters	D.C.
B.S. in M.E. 1933, Cooper Union		A.B. 1945, Duke University	Ten.
B.M.E. 1936, New York University		Leyendecker, Edward Russell, Jr.	D.C.
M.S. 1946, Stevens Institute of Technology		Leyes, Juan Aparicio	Md.
Levy, Irvin Jack	D.C.	Leyshon, Webster Chadwick	Calif.
Levy, Jordan Samuel	D.C.	Lhamon, George Marion	
Levy, Lewis Edward	N.Y.	B.S. 1930, United States Naval Academy	
Levy, Lois Werbner	Md.	J.D. 1949, The George Washington University	D.C.
A.B. 1948, Radcliffe College		L'Hommiedieu, Samuel Joseph, Jr.	D.C.
Levy, Nathaniel	D.C.	B.S. 1949, Maryland University	D.C.
Levy, Priscilla	N.Y.	Liang, Edward Yin	N.Y.
A.B. 1948, Hunter College		Liang, Maria Mu-Lian	
Levy, Stanley Stephen	D.C.	M.D. 1942, National Sun Yat Sen University, Canton, China	Mo.
Lewallen, Harold	Md.	Libbee, Max Scott	N.H.
Lewallen, Iris Battle	Md.	Libby, Edwin Clark	D.C.
A.B. 1933, John B. Stetson University	Va.	Liberty, Cyril Jean	D.C.
Lewis, Alan Mead	N.Y.	Libys, Leon	D.C.
Lewis, Arnold Charles		Libys, Morris	Oh.
B.S.S. 1937, College of the City of New York		Licht, Irving H	
Lewis, Daisy Mildred	D.C.	A.B. 1943, Ohio University	Md.
Lewis, David George, Jr.	D.C.	Licht, Rita R. P.	Mass.
Lewis, Delbert R.	Ariz.	Lichtenstein, Lucille G.	Iowa
Lewis, Edward, Jr.	D.C.	Lichty, Marion Cox	Va.
Lewis, Edward Francis	Va.	Lidji, Lena	N.Y.
Lewis, Edwin Newell, Jr.	D.C.	Lidji, Marcel	Md.
Lewis, Ellen Lucille	D.C.	Lidsky, Martin David	D.C.
Lewis, Fred Ted	Calif.	Liebersohn, Bertha Roseman	
A.B. 1933, Duke University		Lieblein, Julius	
Lewis, George Allan	Pa.	B.S. 1935, College of the City of New York	
A.B. 1930, Wilkes College		A.M. 1940, Brooklyn College	D.C.
Lewis, Glenn Paul	Ohio	Lieder, Nathan	
Lewis, Harry Frank	W.Va.	A.B. 1943, College of the City of New York	D.C.
A.B. 1936, West Virginia University		Lief, Donald Wolfe	Va.
Lewis, Harvey Daniel	Va.	Liekweg, William Gerard	
A.B. 1924, Wofford College		A.B. 1938, Georgetown University	N.D.
A.M. 1938, University of South Carolina		Lien, John Pershing	Wis.
Lewis, Herbert Bernard	Md.	Liesener, Victor Frank	Pa.
LL.B. 1941, The George Washington University		Licht, E. Jerry	
Lewis, Jack Collins	Md.	B.S. in E.E. 1946, Columbia University	D.C.
Lewis, James William	D.C.	Lightner, Celia Edith	D.C.
A.B. 1933, Maryville College, Tenn.		Lii, Hwei-Chen	Md.
Lewis, John Cain	Wash.	Likely, Gwendolyn Dale	
Lewis, John Wallace	Va.	B.S. 1944, University of Maryland	Ola.
Lewis, John Warren	D.C.	Liken, Robert Lee	Md.
A.B. 1948, The George Washington University		Likens, Martha Grace	
Lewis, Leonard Mark	N.Y.	A.B. 1940, University of Maryland	Ill.
B.S. 1946, University of North Carolina		Lilien, Charles Ernest	D.C.
Lewis, Leonard Woodson	D.C.	Lilienkamp, Virginia Ruth	Md.
Lewis, Lunsford Harland	D.C.	Liljeeren, Ervin James	Idaho
Lewis, Mae Kathryn	Va.	Liljenquist, L. Blaine	
Lewis, Markham Van Fossen	Va.	B.S. 1938, University of Idaho	Va.
Lewis, Muriel Janet	Calif.	Lillard, Kathleen Flester	
A.B. 1944, University of California		A.B. 1943, The George Washington University	Ten.
Lewis, Raymond Winslow	D.C.	Lillard, Robert Whitely	Pa.
A.B. 1935, Cornell University		Lilles, Horace Clifton	Ohio
Lewis, Robert Baughman	D.C.	Lilledale, Wilma Laralee	Ohio
A.B. 1941, University of Western Ontario		Lilichers, Herbert Whitman	D.C.
Lewis, Seth	Va.	Lilly, Alta Bernice	
A.B. 1936, The George Washington University		B.S. 1933, Mississippi Southern College	Va.
Lewis, Virginia Emerson	Tenn.	Lilly Lowell	D.C.
A.B. 1935, LL.B. 1941, The George Washington University		Lim, Chai-Ming	Mo.
Lewis, William Hubert	Va.	Linch, Marjorie Elaine	D.C.
		Linchuck, Stanley Martin	Va.
		Lincoln, John Larkin	

Lincoln, Judson Duley	Va.	Litsch, Harry John	Pa.
A.B. 1943, University of Maryland		B.S. 1949, Pennsylvania State College	
A.M. 1948, The George Washington University		Little, Arthur Franklin	D.C.
Lind, Robert Neal	Va.	Little, Arthur Ludwig	Conn.
Lindahl, Ivan LeRoy	Neb.	B.S. 1944, Trinity College, Conn.	
B.S. 1941, Nebraska Central College		M.B.A. 1947, University of Pennsylvania	
Lindamood, Joseph Ganam, Jr.	Md.	Little, Bobby Grier	Ga.
A.B. 1944, University of Maryland		Little, John Howard, Jr.	Va.
Lindberg, Carl Donald	Md.	Little, Marion Nethery	Va.
Lindberg, Dale Sheldon	Pa.	B.S. 1922, United States Naval Academy	
A.B. 1943, Bucknell University		Little, Mary Jane	D.C.
Linden, Joseph Edwin	Md.	Little, Robert Paul	D.C.
Linden, Robert Joseph	N.Y.	Littleton, Willis Calvin	Ky.
Lindholm, Einar	D.C.	Littman, Simon	D.C.
Lindley, Thomas Madison	Ariz.	L.L.B. 1931, University of Maryland	
Lindner, Theodorus Alphonse	N.Y.	Litts, Rhina Jean	Vt.
Lindow, Eva Thompson	Va.	Littwin, Charles Stuart	N.J.
Lindsay, Albert Jerome	D.C.	A.B. 1943, Hobart College	
A.B. 1938, Harvard University		Litz, Francis Joseph, Jr.	D.C.
A.M. 1939, University of North Carolina		Litz, Paul Robert	D.C.
Lindsay, Douglas Edward	N.Y.	Lin, Chia-Le	D.C.
Linsay, John Joseph	Va.	Lin, Daisy	D.C.
Linseth, Clinton Oliver	N.D.	Lin, Ho	D.C.
Linsley, Dale Eugene	Iowa	A.B. 1942, Lingnan University, China	
Linsley, Raymond Gladding	D.C.	Linn, Elli	D.C.
Linsley, Raymond O'Neil	Va.	Lively, Carl William	W.Va.
Line, Lucille	Mont.	Lively, Jas Hazel	W.Va.
A.B. 1949, Montana State University		A.B. 1947, Concord College	
Linebarger, Louise O'Reilly	D.C.	Livemore, Ruth Hamilton	D.C.
Linebarger, Margaret Snow	Md.	Livingston, Charles Richard	Va.
Linehan, Daniel William	Mass.	Livingston, Gordon Kendall	N.Y.
A.B. 1949, The George Washington University		Livingston, Jean Meadows	Va.
Linheld, Robert Frederick	Mont.	Livingston, Leonard Leroy	Md.
Linsendeler, Glen	Md.	Lindas, Anthony	Va.
Linsendeler, Ivan Glenn	Pa.	Lloyd, Albert Lawrence, Jr.	Pa.
Linsley, Mary Josephine	Va.	Lloyd, Benjamin Joseph, Jr.	D.C.
Linhof, Eric	D.C.	Lloyd, Donald Geddes	Va.
A.B. 1949, University of Rochester		Lloyd, Rita Hortense	D.C.
Link, Edgar Martin	Pa.	Lloyd, William James	
Link, Robert O.	Va.	A.B. 1949, University of Maryland	
Link, Robert Wendell	N.J.	Locher, Junior Lewis	Md.
Linkins, Robert Mason	Md.	Locher, Victor Joseph	D.C.
Linman, Douglas Gerrard R.	D.C.	Lockhart, Elizabeth Berkeley	Va.
Lipkey, James Ray	Fla.	A.B. 1927, College of William and Mary	
Lipovsky, Frank Joseph	D.C.	Loelato, Norman Joseph	N.Y.
Lippitt, Raymond Franklin	D.C.	Loe, Myron L.	D.C.
B.M.E. 1949, The George Washington University		Loewenstein, Regina Louise	N.J.
Lippitt, Thomas Perry	D.C.	A.B. 1946, Barnard College	
Lipps, Sarah Elizabeth	Va.	A.M. 1947, Columbia University	
B.S. 1945, Madison College		Loew, Marvin Richard	D.C.
Lipps, Sue Kirk	Va.	Lofgren, Agnes Marie	Kans.
Lipsky, Harold	N.J.	Lofgren, Joseph	
A.B. 1947, New York University		Lofgren, Timothy Patrick	Pa.
Lipsky, John Joseph	R.I.	Logan, Joseph Albert	Mass.
Liska, Ellen Lydia	D.C.	Lohm, Thomas Alexander	Md.
Liska, George	D.C.	A.B. 1949, The George Washington University	
L.L.D. 1948, Charles University, Prague		Lohman, Richard Herbert	D.C.
Liska, Olga Mary	D.C.	Lohmeyer, Doris Josephine	D.C.
Lisonbee, Bird Eugene	Va.	Lohmeyer, Margaret Mary	D.C.
Lissner, Natalie Elizabeth	Netherlands	Lohr, Betty Ann	D.C.
L.L.B. 1944, L.L.M. 1938, University of Leiden, Netherlands		Lokke, Bernard Molineaux	N.Y.
Lister, Herbert Everett	D.C.	Lomax, John Frederick	Ill.
Liter, Stanley Marsh	D.C.	Lombardi, Reilly Robert	Ohio
Liter, Oneta	Va.	Lonas, Leonard Luther, Jr.	Va.
B.S. 1946, University of Missouri		B.S. 1947, Virginia Military Institute	
A.M. 1952, Columbia University		Lonberger, Stanley Thomas	D.C.
Lithgow, James	D.C.	Londis, Louis James	N.Y.
		London, Arthur	Md.

London, John Monte	N.Y.	Loring, Winifred Adelaide	D.C.
A.B. 1941, Harvard University		Lo Russo, Rudolph Richard	Pa.
Loneragan, Ann Yates	Conn.	Losche, Herold Homer	Ind.
B.S. 1948, Wilson Teachers College		A.B. 1915, Hanover College	D.C.
Long, Ashley Bateman	Va.	Lo Schiavo, Mary	Va.
Long, Bazel Ellis	Va.	Losee, Gordon Carroll	
Long, Billie Ketchie	D.C.	B.S. 1931, M.S. 1936, Ph.D. 1940, University of Illinois	N.Y.
Long, Charles William	Md.	Lott, Fred Eli	
Long, Dewey Cecil	Okla.	A.B. 1947, A.M. 1948, Syracuse University	D.C.
Long, Donald Whitney	Ill.	Lott, George Agnew	
Long, Frank Leon	D.C.	B.S. 1948, The George Washington University	D.C.
Long, George Edward	D.C.	Lott, Margaret Agnew	D.C.
LL.B. 1949, The George Washington University		Loughridge, Harry Joseph	Va.
Long, Helen Cornelia	D.C.	Louk, Ralph Glyn	Pa.
Long, Jack Rush	D.C.	Loun, Elva Mary	Mass.
Long, John Martin	Pa.	Lourenco, Manuel Joseph	D.C.
B.S. 1950, Pennsylvania State Teachers College, Lock Haven		Lout, James Fisher	Md.
Long, Leonora	Va.	Love, Daniel Knapp	Md.
A.B. 1936, The George Washington University		Love, Jack Edward	
Long, Melvin Eugene	Pa.	A.B. 1948, College of Notre Dame of Maryland	Pa.
Long, Orrin	Ill.	Love, James William	D.C.
A.B. 1941, University of Chicago		Love, James William	Tenn.
Long, Paul Robert	Pa.	Love, Jolee	
A.B. 1949, The George Washington University		B.S. 1932, A.M. 1934, George Peabody College for Teachers	Va.
Long, Richard Ward	Va.	Lovelace, Neil Richard	
Long, Robert Lawrence	Kans.	A.B. 1948, A.M. 1948, The George Washington University	Md.
Long, William Francis Edward II	D.C.	Loveless, Joseph Mundell	D.C.
A.B. 1946, A.M. 1947, The George Washington University		Lovell, Guy W.	D.C.
Longan, Edmund Herman	S.D.	Lovell, Allen Kinsman	D.C.
Longfellow, Dean Johnson	D.C.	Lovewell, Suzette	Idaho
A.B. 1934, The George Washington University		Loving, Sylvia Florence	D.C.
Longfellow, Donald Woodward	D.C.	Low, Rhoda	Mass.
Longfellow, Edwin Connor	N.J.	Low, Richard James	W.Va.
A.B. 1949, The George Washington University		Lowe, Eugene Walper	D.C.
Longstreet, Archie P.	N.J.	Lowe, Franklin Gerald	Mass.
Longyear, Andrew Rudston	Mass.	Lowe, Ira Melvin	
Longyear, Robert Rudston	D.C.	LL.B. 1948, The George Washington University	W.Va.
Looby, Richard Emmet, Jr.	Md.	Lowe, J. William	Mo.
Loomis, Gilbert Brainard, Jr.	N.Y.	Lowe, Joseph Burk	
Loomis, Grant A. Gray	N.Y.	B.S. 1940, Southeast Missouri State College	
Loomis, Gwendolyn Yvonne	Tex.	A.M. 1947, University of Missouri	D.C.
A.B. 1947, The George Washington University		Lowenthal, Emil	D.C.
Loomis, Helene Elisabeth	D.C.	Lowenthal, Herman	Md.
Loomis, Jerome Lathrop	Wis.	Lowery, Thomas Cumillus	Wash.
B.Ed. 1915, Wisconsin State Teachers College, Whitewater		Lowman, David Daniel	Mass.
A.M. 1942, Northwestern University		A.B. 1949, Stanford University	D.C.
Loomis, Maxine Ann	Ill.	Lowrie, Alexander Robert	Calif.
Loomis, Wilhelmina Lucia Tortike	Md.	Loy, John Irving	
Loosarian, Armen Batour	Va.	A.B. 1942, University of California at Los Angeles	Va.
B.S. 1948, Columbia University		Loyd, Arden Robinson	D.C.
Loosarian, Yerchanig Antreasian	Va.	Loyd, Elizabeth Gregg	D.C.
Loose, Frederic DeTurck	Va.	Loyd, Ray Dean	Va.
Loose, Winfield Warren	Pa.	Loyk, Victor	Cuba
Loper, Matel Grace	Kans.	Loy, Maria Luisa	
Lopes, James	D.C.	C.P.S.E. 1939, LL.D. 1949, D.D.C. 1945, University of Havana	D.C.
Lopez, Cornelio Orial	Md.	Lozada, Zeny Zapanta	Del.
A.B. 1937, State University of Iowa		Lozano, Edgardo Manuel	Pa.
Lopez, Manlio Maldonado	D.C.	Lubczyk, Johanna	D.C.
Lorah, Richard Alfred	Pa.	Lubin, Bernard	N.J.
B.S. 1949, Georgetown University		Lubin, Donald	
Lord, Marion Wilson	D.C.	A.B. 1948, The George Washington University	D.C.
Lorditch, Joseph James, Jr.	D.C.	Lubin, Frances Reichman	
Loren, Phyllis C.	Minn.		
Lorenz, James Edward	Ark.		
Lorenzen, Jean Elizabeth	D.C.		

MacArthur, Edgar Huston	D.C.	Maccomb, Alexander	D.C.
MacArthur, Guy	D.C.	B.S. 1911, United States Naval Academy	
Macaulay, Ruby Mitchell	Ill.	Macon, Edward Malcolm	D.C.
A.B. 1928, Mount Morris College		Macon, Robert Carpenter	D.C.
M.S. 1948, Columbia University		Macpherson, Alan Campbell	D.C.
MacCormick, Willfred Raymond	D.C.	B.S. 1943, University of Maryland	D.C.
MacCracken, William Lewis	D.C.	MacRae, Duncan Shaw	D.C.
MacDonald, Roger Milo	Va.	Macri, Frank John	D.C.
MacDonald, Charles Brown	D.C.	A.B. 1943, University of Maine	Va.
A.B. 1942, Presbyterian College		MacSporran, John Samuel	
MacDonald, Frank Joseph	Md.	A.B. 1940, Yale University	Iowa
MacDougall, Dougall	N.Y.	Macy, Janet Louise	Md.
Mace, Almon Turley	Va.	Madden, Dennis William	
B.S. 1934, M.S. 1936, Purdue University		B.Arch. 1943, Catholic University of America	
Macekura, Joseph	Pa.	Madden, William Russell	Okl.
A.B. 1949, The George Washington University		Maddix, Grace Evelyn	Kans.
MacElhose, Jack Harold	W.Va.	Maddox, Pauline H.	Iowa
MacEuch, George	Md.	A.B. 1918, Cornell College	Md.
MacEwen, Ellen Mae	Md.	Maddox, Preston Francis	Va.
MacFarlane, James Cunningham, Jr.	Md.	Mader, George Franklin	
MacGill, Leon Herbert	Va.	A.B. 1947, University of Richmond	Ill.
MacGrain, Marjorie Ellen	Nebr.	Madsen, Andrew Calvin	Nebr.
MacGowan, Ohea	D.C.	Madsen, Karen Violet	D.C.
MacHa, Marilyn Clara	Tex.	Maffey, Ralph Burton	
MacKen, Lorelle Homing	D.C.	B.S. 1941, Rutgers University	Va.
A.B. 1941, Mills College		Magee, Robert Henry	N.Y.
MacKen, Valentine	D.C.	Magna, Paul Angelo	D.C.
A.B. 1942, University of Maryland		Mahan, Kenneth Eugene	Va.
MacKenber, Edith	D.C.	Magill, Elizabeth Graybill	
MacKeta, John	N.J.	A.B. 1946, University of North Carolina	N.D.
A.B. 1948, The George Washington University		Magill, Grace Lorraine	D.C.
MacKlin, Claire Tajen	D.C.	Magill, Jane Elfreda	Tenn.
A.B. 1947, Hunter College		Magin, George Benedict, Jr.	
MacLus, Franklin Elliott	D.C.	B.S. 1946, University of Chattanooga	Idaho
MacIntire, Andrew Harry	Md.	Magleby, Dale Hammer	
Mack, Ferdinand Joseph	Conn.	B.S. 1948, A.B. 1949, Idaho State College	Md.
Mack, James Edward	Fla.	Magner, Joseph Paul	Ohio
A.B. 1943, The George Washington University		Magness, John Lower	Mont.
Mack, John Halford	Md.	Magnus, Frederick	D.C.
B.S. 1917, University of New Hampshire		Magrath, May Irene B.	
Mack, Victor Anthony	N.Y.	A.B. 1926, St. Joseph's College for Women	Va.
A.B. 1941, Brooklyn College		Maguire, John Barry	Ill.
MacKasek, James Philip	D.C.	Maguire, Katherine Doehne	
MacKensen, Judith Agnes	D.C.	A.B. 1948, Hood College	Pa.
Mackey, Argyle Robert	Va.	Mahan, John Victory	
Mackey, Charles Eugene	Calif.	A.B. 1949, University of Pittsburgh	Mich.
Mackey, Constance Jean	Pa.	Mahaney, John Gage	
A.B. 1949, Duke University		B.S. 1949, Michigan State College	N.Y.
Mackey, Leonard Bruce	N.Y.	Mahar, Daniel John	D.C.
B.E.E. 1945, Rensselaer Polytechnic Institute		Mahar, Robert Francis	Va.
Mackey, Mary Ellen	Va.	Mahardy, John Thomas	Calif.
Mackrell, James Joseph	N.Y.	Maher, Eugene Hugh	
MacLaughlin, Matthew Charles	Wyo.	B.S. 1933, United States Naval Academy	Tex.
MacLean, Hugh Donald	Va.	Maher, Francis Patrick	N.H.
MacLean, William Gordon, Jr.	Va.	Maher, John Francis	
MacMillan, John Howard	Md.	A.B. 1948, University of New Hampshire	Tex.
LL.B. 1949, The George Washington University		Mahler, Nora F.	Pa.
MacMillan, William McGregor	Va.	Maholchic, Eugene Francis	D.C.
MacMurdy, Robert Duncan	D.C.	Mahoney, John Andrew	N.Y.
A.B. 1947, Princeton University		Mahoney, Richard Joseph	D.C.
MacNab, John Erwin	Canada	Mahood, Harry Richard	Ohio
A.B. 1948, The George Washington University		Maiden, E. Jane	Va.
MacNeil, Joseph Hector	D.C.	Maigret, Vera Sheffield	Va.
MacNichol, Layton Frank	D.C.	Main, William Elmer	Md.
A.B. 1942, The George Washington University		Mainhart, Howard Morrell	Md.
		Maire, Cyril Emil, Jr.	Tex.
		Mainch, Ormand Russell	

Maisel, Seymour Georg A.B. 1940, Bucknell University	Pa.	Mandrovsky, Boris Nicholas B.S. 1940, College of the City of New York	N.Y.
Maizchzyk, Edmund Steven	N.Y.	Mann, Manfred	D.C.
Maki, Walfred Victor	Minn.	Manduso, John A., Jr.	D.C.
Makin, Lloyd John	D.C.	Mannoid, Edward Andrew Phar G. 1934, Philadelphia College of Pharmacy and Science	Md.
Malack, Elbert Hubbard	Ga.	Manzold, Robert John	N.Y.
Malack, Bernice	D.C.	Manzum, Mary Coe	D.C.
Malack, Howard Stanley	D.C.	Mangum, Mary Inez	N.Y.
Malhoef, Alfred Charles A.B. 1943, University of California	Va.	Manico, Samuel Anthony	D.C.
Malcolm, James Jack	D.C.	Manissas, Elly Despina	Md.
Malec, Edward L. B.S. 1936, University of Illinois	D.C.	Mankin, Arthur Kenneth	Va.
Maleki, Robert Joseph B.S. 1944, Wisconsin State Teachers College, Stevens Point	Va.	Mankin, Keith Archibald B.S. 1948, University of Virginia	Md.
Malinchak, Nicholas A.B. 1949, University of Pittsburgh	Pa.	Mann, Betty Lou	Md.
Maliniah, Lennart	D.C.	Mann, Charles Kenneth	Md.
Malison, Robert	D.C.	Mann, Donegan A.B. 1947, The George Washington University	D.C.
Malkin, Jack	D.C.	Mann, Eva Myrtle Ed B. 1929, Asheville Normal and Teachers College	N.C.
Malkin, Warren Preston	D.C.	Mann, John Gray	D.C.
Mallack, Jerry	Md.	Mann, Leah Frances	N.C.
Mallard, Claude O'Neal	D.C.	Mann, Robert Urban A.B. 1949, The George Washington University	D.C.
Mallory, Francis Edward	N.J.	Mann, Shirley Louise	Md.
Mallgrave, Nina Regina	D.C.	Mann, Vera Williams A.B. 1941, Texas Christian University	Va.
Mallgrave, William John	D.C.	Mantoux, Charles Madison A.B. 1947, Union College, Ky.	Ky.
Mallon, Jerome Anthony	Va.	Manning, Francis John	Va.
Mallow, Ann Elizabeth	D.C.	Manning, Glenn Franklin LL.B. 1948, University of Alabama	Ala.
Mallow, Raymond James	N.Y.	Manning, James Stuart	Md.
Masley, William James	N.D.	Manning, Louis M.	Colo.
Masner, Harold	N.Y.	Manning, Phyllis Mary	Mass.
Malone, John Raymond	Ohio	Manning, Ruth Jean Martin A.B. 1928, Oakland City College A.B. in L.S. 1929, University of Michigan	D.C.
Malone, Mary Kathleen	D.C.	Mano, Kyoma	Ill.
Malone, Ralph Whatley	Md.	Manolagas, Alice Hope	D.C.
Malone, William Grady B.S. 1941, Louisiana State University	Va.	Manos, Nicholas Emmanuel A.B. 1938, A.M. 1942, University of California	D.C.
Maloney, Edward	N.J.	Manoskian, Rachel Elizabeth	D.C.
Maloney, Frank	Va.	Manser, Donald E., Jr.	D.C.
Maloney, Grace Catherine	D.C.	Mansfield, Mae Helen A.B. 1949, The George Washington University	Ill.
Maloney, Helen	Va.	Mantey, Richard Gledhill	Ohio
Maloney, James Edward	D.C.	Mantey, Richard Gledhill B.S. 1948, Western Reserve University	Va.
Maloney, Patricia Claire	Pa.	Mantle, Mary Lou Swift A.B. 1933, University of North Carolina	D.C.
Maloney, William Everett	Mass.	Mansueti, Bernard M.	D.C.
Malowaki, Mary Marguerite	Minn.	Mansueti, George Albert	Tex.
Malstrom, Robert Andrew	Mich.	Manzano, Teodoro A.B. 1947, University of Texas	Ind.
Maltagliati, Oreste Francis	D.C.	Manzenberger, Rudolph, Jr.	Va.
Malterud, Kathrine Artium 1917, Gymnasium, Skien, Norway	Va.	Maple, George William Maples, Houston	Md.
Malterud, Olaf	Norway	Manzarella, Joel Bray	D.C.
M.Ec. 1946, University of Oslo	D.C.	Maraboli, Eugenia Rose	Pa.
Maltman, William Leneave B.S. 1943, University of Oregon	N.H.	Marbois, Noel Jules	Md.
Malven, Cal Stanislaus	Md.	Marcus, Louis Norman	Va.
Malzone, Francis Richard	W.Va.	Marcus, Emily Ann	Va.
Manish, Edith Virginia	W.Va.	March, Christian Laurin, Jr.	N.Y.
Manish, Julia	Pa.	March, Francis Andrew, Jr.	D.C.
Mamolo, Guy Francis	Ohio	March, Joseph Wolf, Jr.	Pa.
Manahan, Raymond James	N.Y.		
Manaker, Leon	Fla.		
Manaley, Joseph Claxton	Pa.		
Mandel, Bernard A.B. 1944, A.M. 1934, University of Pennsylvania	N.Y.		
Mandel, Nathan	D.C.		
Mandelberg, Herman William	D.C.		
Mandels, James Charles A.B. 1947, The George Washington University	D.C.		
Mandjras, Andrew Anthony	Md.		
Mandragos, Constantine Nichols	Md.		

Marchand, Wilbert George	R.I.	Marsh, Frances Brandia	Md.
Marchese, Marion Veronica	N.Y.	A.B. 1925, University of North Carolina	Tu.
Marchi, Louis Basil	D.C.	Marsh, Harold Cameron, Jr.	Va.
Marchwicki Edward	Md.	A.B. 1941, The George Washington University	D.C.
Marchniak, Frank Walter	N.J.	Marsh, Mary Louise	N.Y.
Marclay, Elliott William	D.C.	Marsh, Richard Wade	Va.
Marcosano, Muriel Angelé	N.Y.	A.B. 1943, American University	D.C.
Marcovitz, Ruth	D.C.	A.M. 1949, The George Washington University	N.Y.
Marcuse, Ernest	N.Y.	Marshall, Bennis	Va.
Marden, Ethel Cox	Va.	Marshall, Andree	Va.
A.B. 1948, Mary Hardin-Baylor College		Marshall, Andrew Robert	Md.
Mares, Christie Gilbert	D.C.	Marshall, Charles Elmer, Jr.	W.Va.
Marling, Charles A.	D.C.	Marshall, Charles Lance, Jr.	Va.
A.B. 1936, Pennsylvania State College		B.S. in E.E. 1949, Purdue University	Va.
M.S. 1949, Columbia University	Calif.	Marshall, Edward Lester, Jr.	Va.
Margaritis, Nicholas John	D.C.	Marshall, Frank Stadden, Jr.	Va.
Marggraf, Bertha Virginia	D.C.	Marshall, John	Va.
Margolia, Joel		Marshall, John C.	D.C.
B.S. 1948, University of Maryland		Marshall, Joseph Leo	Va.
Margrave, Elmer	D.C.	Marshall, Lilvan May	N.Y.
A.B. 1947, The Citadel		Marshall, Marvin Lawrence	Fla.
Mariano, Joseph Frank	N.J.	Marshall, Mildred Maxine	D.C.
Mari-Bras, Juan	Puerto Rico	Marshall, Ruth	Va.
A.B. 1949, Florida Southern College		Marshall, Charles Everett	D.C.
Marine, Melvin Irving	Md.	Mausteller, Herbert Heiskell	Va.
Marinelli, Victor Francis	Md.	Marston, Alan Douglas	Md.
Marinoble, James Vincent	Va.	B.E.E. 1948, University of Louisville	Md.
Marion, Paul James	Va.	Martell, Robert Joseph	Calif.
Markell, John Kincaid, Jr.	Va.	A.B. 1939, University of Maryland	
Markes, Eleanor Margaret	Va.	Martens, Doris Katherine	
Markham, Charles Buchanan	N.C.	A.B. 1944, University of Southern California	D.C.
A.B. 1945, Duke University		Marthinsen, Clara Brasel	
Markham, George Douglas	D.C.	A.B. 1941, The George Washington University	Va.
Markham, Mary Rita	D.C.	Martin, Albert Louis	Md.
Markham, Richard Allen	D.C.	Martin, Carrie Panebaker	Va.
Markle, John Henry	Va.	Martin, Daniel Walter	Md.
Markley, Allan L.	D.C.	Martin, Dean Harrington	D.C.
Markmann, George Howe	Va.	Martin, Donald Drew	Neb.
Markovich, Mike	D.C.	Martin, Edward Eugene	D.C.
B.S. 1949, Georgetown University		Martin, Fay Emmett	Wash.
Markowitz, Agnes Regina	Pa.	Martin, Grant Poeller	Md.
Markowitz, Irving	N.J.	Martin, Harry Robert	
Marks, Chester Dale	D.C.	A.B. 1949, University of Puerto Rico	Va.
Marks, Donald	N.Y.	Martin, Hugh Jack	
Marks, Geneva Alberta	D.C.	J.D. 1939, The George Washington University	Va.
Marks, Ida May	N.Y.	Martin, James Carroll	D.C.
Marks, Lee Robert, Jr.	Ga.	Martin, James Lewis, Jr.	Va.
Marks, Solomon	Md.	Martin, Janice Catherine	
B.S. 1937, College of the City of New York		A.B. 1948, The George Washington University	Ind.
Markwood, Carl Christopher	Pa.	Martin, Jerome Daniel	D.C.
B.S. 1949, St. Vincent's College		Martin, John Peter	D.C.
Markwood, Juliet	D.C.	Martin, John Warren	
Marlin, Walter, Jr.	Md.	A.B. 1938, Dartmouth College	Md.
Marlow, Charles Austin, Jr.	Calif.	Martin, Judith Lee	D.C.
Marlow, Howard Waring	Md.	Martin, Julius Corpening	Md.
Marlow, William Haworth	Md.	Martin, Laura Evelyn	D.C.
Marlowe, George Albert, Jr.	D.C.	Martin, Lawrence Stephen	Md.
B.S. 1947, The George Washington University		Martin, Leyland Myers	Pa.
Marmor, Alfred Charles	N.Y.	B.S. 1934, University of Arkansas	
Marowitz, Daniel David	D.C.	Martin, Luther Nunemaker	N.H.
Marowitz, Virginia Woodbury	N.M.	B.S. 1949, University of Missouri	Va.
A.B. 1946, University of Maryland		Martin, Marjorie	D.C.
Marquardt, Frank Richard	Va.	Martin, Marshall Alden, Jr.	D.C.
Marques, Mary Gilda	Mass.	Martin, Mary Carolyn	Md.
B.S. 1941, Massachusetts State Teachers College, Salem		Martin, Paul Kyler	D.C.
A.M. 1942, Boston University		Martin, Paul Ray	
Marra, Alfred Louis	D.C.	Martin, Peter J.	
Marrero, Robert	N.Y.		
Mars, Calvin Rodes	D.C.		
Marsden, Frances Thomas, Jr.	D.C.		

Martin, Philip Joseph	N.Y.	Masse, Samson	N.Y.
Martin, Ralph Edward	Maine	Massey, Frank Stanley	D.C.
Martin, Richard Alton	Ohio	Massey, Cary Winston	Va.
Martin, Robert Douglas	D.C.	Massey, Katie Garland	Va.
A.M. 1948, East Carolina Teachers College		B.S. 1935, Virginia State Teachers College, Farmville	
Martin, Robert Henry	Pa.	Massey, Maxine	Mo.
Martin, Robert Laverne	Ala.	Mast, Phillip Wonn	D.C.
Martin, Robert William, Jr.	Mo.	Masters, Marcelle Claribel	Ark.
A.B. 1949, Southwest Missouri State College		Masters, Margaret Ann	Pa.
Martin, Roger Arthur	Md.	Masterson, Francis Wilbur	Mont.
Martin, Shula	D.C.	Mastrone, Viola Virginia	D.C.
Martin, Thomas Archie	Ill.	Mastropaulo, Salvatore	N.Y.
A.B. 1949, The George Washington University		B.S. in Ed. 1941, College of the City of New York	
Martin, Thomas Dillon	Va.	Matacia, Florence T.	Va.
Martin, Watt Nicholas	Va.	Matera, Ralph Joseph	D.C.
Martin, Wayne Francis	Va.	B.S. 1946, The George Washington University	
Martin, Willard Arthur	D.C.	Maters, Catherine Elizabeth	D.C.
Martin, Zagorka Plavsic	D.C.	Mates, Edward L.	N.Y.
Martini, Leo	Tex.	A.B. 1939, Brooklyn College	
Martinez, Charles	D.C.	Mates, Ida Elaine	Pa.
Martinez, Anthony Francis	Pa.	Matheney, Elizabeth Rachel	Va.
A.B. 1948, The George Washington University		B.S. 1919, Radford College	
Martins, Elson Solano	Brazil	Matheny, Elizabeth Jane	Va.
Martins, Frank	D.C.	Matheny, Lela S.	Mo.
Marton, Tibor William	D.C.	Mathers, Alex Pickens	Va.
Martowicz, Edward Thomas	Ohio	B.S. 1931, University of Florida	
Martusevich, Gregory Paul	N.Y.	M.S. 1946, Tulane University	
Martyn, Earl William	D.C.	Mathers, Ella Grim	Va.
A.B. 1939, Catholic University of America		B.S. 1942, Madison College	
Martz, Mary Hannah	D.C.	Matheson, John Douglas	D.C.
Massey, Joseph Louis	Va.	B.S. 1931, United States Military Academy	
Martvil, Frederick Linwood, Jr.	D.C.	Mathews, Edward Ray	Ark.
Mart, David Lester	D.C.	Mathews, Milton M.	Va.
Mart, Joseph William	Pa.	A.B. 1941, University of Illinois	
Mart, Robert Simon	Mass.	Mathews, Robert Stanley	D.C.
Martyn, David	D.C.	Mathewson, Arthur de Wolfe	Canada
Martzo, Floyd Augustus	D.C.	A.B. 1949, McGill University	
Maschauer, Ruth Doloris	D.C.	Mathias, Esther A.	D.C.
Mascharelli, Joseph Robert	Md.	Mathias, Richard Bingham	D.C.
Masolo, Virginia Joan	N.Y.	Mathieson, Walter Whisman, Jr.	D.C.
Maser, Janice Marie	D.C.	Mathis, Irvine	N.Y.
A.B. 1948, University of Nebraska	Va.	Mathis, William Lowrey	Tenn.
Maser, Wesley John	Nebr.	B.S. in M.E. 1947, Duke University	
A.B. 1948, University of Nebraska		Mathur, Krishn Dayal	India
Mashburn, Thomas Vincent	Ala.	M.S. 1942, Osmania University, India	
B.S. 1947, University of Alabama		Matlaw, Betty Bernice	D.C.
Masiello, Joseph Alvin	Va.	Mattson, Richard Lee	Iowa
Maskaleris, Christos Louis	Conn.	Mattachione, Albert Paul	Md.
Maskaleris, Eva Chris	Okla.	Mattern, Roy Edwin, Jr.	Mich.
Maslow, Albert P.	D.C.	B.S. in M.E. 1942, LL.B. 1948, University of Michigan	
A.M. 1948, Western Reserve University		Matthes, Chester Anthony	Md.
Mason, Anne Dunklin	Ala.	Mathews, Charles Donald	Tex.
Mason, Chaytor Dierz	Va.	A.B. 1948, A.M. 1949, The George Washington University	
A.B. 1949, The George Washington University		Mathews, Elsie Carolyn	Md.
Mason, Frances	D.C.	Mathews, Jack Kean	Ind.
A.B. 1948, University of Kansas City		B.S. 1949, Rose Polytechnic Institute	
Mason, Gwendolyn Hunsucker	Va.	Mathews, Loren Allen	Md.
Mason, Katharine Natalie	Va.	A.B. 1940, Union College, Nebr.	
B.S. in Ed. 1946, Madison College		Mathews, Martin	Md.
Mason, Rothwell Brisbane	Md.	Mathews, Reynold Judson	D.C.
A.B. 1949, Dartmouth College	D.C.	Mathews, Samuel Sheridan	Va.
Mason, William Ballard	Maine	Matta, Louis Joseph	D.C.
B.S. 1949, University of Maine		Mattimore, Walter Bernard	N.Y.
Masone, William Joseph	Md.	LL.B. 1947, The George Washington University	
Masse, Marilyn	Va.	Mattos, Anne Mathilde	Md.
A.B. 1944, Henderson State Teachers College		Mattingly, Grace Marie	D.C.
		Mattingly, Richard Curtis	D.C.

Mattingly, Thomas Ernst, Jr. A.B. 1948, The George Washington University	Md.	Mazur, Anthony Joseph Mazur, George, Jr. Mazza, Louis Francis	Md. Pa. Va.
Mattox, Virginia Belle	Va.	McAdams, Joseph M.	D.C.
Mattson, Arthur Richard	D.C.	McAllister, Edward Joseph	N.Y.
Matulis, Florence Frances	N.J.	McAmis, Thomas Arthur, Jr.	Tenn.
Matusic, Frank, Jr.	Pa.	McAmis, William Jack	D.C.
Matyas, Albert Ambrose B.S. 1935, United States Military Academy	Va.	McAnallen, Frances Gloria McAndrew, John Joseph B.S. 1949, Gannon College	Md. D.C.
Maudlin, Robert Vearl	D.C.	McAnsh, Andrew Thomas	Va.
Mank, Wallace Hamilton	D.C.	McArdle, Dorothy Kelly	D.C.
Maupin, Ann Maury	Md.	McAuliff, Rita Catherine	D.C.
Maupin, Dorothy Ray B.S. 1949, The George Washington University	D.C.	McAuliffe, John Hilary McAvoy, Philip James McBride, Robert James, Jr.	D.C. Maine Va.
Maupin, James Cary	Calif.	A.B. 1948, The George Washington University	D.C.
Maurer, Bowman Joseph	Pa.	McBride, Willard Carlos B.S. 1948, University of Maryland	Kan.
Maurer, George Joseph	Pa.	McBroom, Janice Koran	Md.
Maurer, Jane Holly	Va.	McBurnett, Roe David, Jr. B.S. in E.E. 1944, Georgia Institute of Technology	D.C.
Maunello, Matthew Joseph B.S. 1948, The George Washington University	N.J.	McCaffrey, Elva	Ky.
Maunello, Nicholas Michael	N.J.	McCall, Barbara Ann	Fla.
Mauro, Louis Quarto	N.Y.	McCall, Bryant Franklin	Md.
Mauzy, Ann Henderson	Md.	McCall, Chester Hayden, Jr.	Calif.
Mauzy, Priscilla Banker	Md.	McCalley, John Wallace A.B. 1945, A.M. 1947, The George Washington University	Kan.
Mavridis, Photios Adam	Md.	McCalley, Marian Norby B.S. 1937, Kansas State College of Agriculture and Applied Science	Miss.
Mawhood, Samuel Allen	Va.	McCallum, Maurice Duncan A.B. 1943, The George Washington University	D.C.
Maxcy, Frederic Reynolds	Md.	McCallum, Rita Anne A.B. 1949, Dunbarton College of Holy Cross	N.J.
Maxson, Webster Prescott A.B. 1939, Amherst College LL.B. 1949, University of Cincinnati	Mass.	McCamy, Margaret Elizabeth A.B. 1931, Rutgers University	Va.
Maxwell, Frederick Brooks, Jr.	Md.	McCann, Brendan James	D.C.
Maxwell, Raymond Carl	D.C.	McCann, Marcella	Mass.
May, Barbara	D.C.	McCann, Mary Eileen	D.C.
May, Robert Richard	D.C.	McCann, Robert Thomas	N.J.
May, Thomas James A.B. 1949, The George Washington University	D.C.	McCarron, John Daniel B.S. 1948, Georgetown University	N.H.
Maybee, John Stanley	D.C.	McCarten, William Gray B.S. 1946, University of New Hampshire	N.H.
Mayberry, David Harper A.B. 1949, University of Florida	Fla.	McCarthy, Daniel Francis B.S. 1946, University of New Hampshire	D.C.
Mayberry, Grant Elmer	Md.	McCarthy, Daniel Joseph, Jr.	Mass.
Mayberry, Lawrence Edgar	Ill.	McCarthy, Eunice Mary A.B. 1948, Duke University	D.C.
Mayberry, Paul Raymond	Maine	McCarthy, John Aloisius	D.C.
Mavencourt, Herman	D.C.	McCarthy, John Ernest	Va.
Mayer, Fred Louis	D.C.	McCarthy, John Francis	Ohio
Mayer, Joseph Henry A.B. 1940, University of Chicago	D.C.	McCarthy, John Robert	D.C.
Mayer, Joseph Lewis, Jr.	D.C.	McCarthy, Lawrence Daniel	Va.
Mayer, Robert Charles B.S. 1948, Georgetown University	D.C.	McCarthy, Margaret Angela	D.C.
Mayer, William Scanlon	N.Y.	McCarthy, Mary Ellen A.B. 1947, Duke University	Calif.
Mayers, Richard Ralph A.B. 1947, Dartmouth College	D.C.	McCarthy, Robert Earl B.S. 1947, University of California	Md.
Mayes, Basil Lamar	Calif.	McCarthy, Thomas Vincent	D.C.
Maymi, Protasio A.B. 1949, The George Washington University	Puerto Rico	McCartney, Junius Areee McCarty, Charles Dennis B.S. in M.E. 1941, Northeastern University	D.C.
Mayne, John Cleland A.B. 1948, Alton College	Mich.	LL.B. 1948, Boston University	
Mayo, Harold Emmett	Ill.		
Mayo, Martha Ellen	Ind.		
Mayo, William Elmer	Ga.		
Mayo-Wells, Jean Olds A.B. 1926, Syracuse University	D.C.		
Mayo-Wells, Wilfred James	D.C.		
Mays, Oscar Ramsey	D.C.		
Mazalewski, Raymond Adam Ph.D. 1938, LL.B. 1941, Marquette University	Wis.		
Mazenderani, Abraham Khajavi	N.Y.		
Mazero, John Robert	Pa.		

McCarty, Henry Thomas B.S. 1943, Boston University	N.H.	McCorkle, Howard, Jr.	Pa.
McCarty, Jacqueline Logan	Va.	McCormack, James Stanley, Jr.	Pa.
McCarthy, William Homer	Iowa	McCormack, Anna Moffatt	Va.
McCausland, Stanley Lee B.S. 1948, Ursinus College	Pa.	McCormick, Margaret Anne	Pa.
McCawley, William Carson	D.C.	McCormick, Robert Nicholas	N.Y.
McCay, Ellie Mae A.B. 1919, A.M. 1939, University of Georgia	Ga.	McCormick, Shirley Viola	Ga.
McCay, Iris Jean	Va.	McCoskey, Robert Edgar	D.C.
McCeney, Buchanan Houston	D.C.	McCowan, Joseph Aaron B.S. 1948, Utah State Agricultural College	Utah
McClain, Edward Fifer, Jr.	D.C.	McCoy, Marshall Levi	Va.
McClain, George William, Jr.	Md.	McCoy, Mercer Garnett	Va.
McClanahan, Carl B.S. 1948, Georgetown University	D.C.	McCoy, Thomas Raymond	D.C.
McClanahan, Mellic	D.C.	McCoy, William, Jr.	Va.
McClarin, William Hugh, Jr.	Pa.	McCoy, William, Jr. A.B. 1944, Washington and Lee University	Va.
McClellan, Ethel Shoemaker	Iowa	McCracken, Kelly Thomas, Jr.	Va.
McClellan, Lavonne Hedeen A.B. 1947, The George Washington University	Iowa	McCraw, Blanche	D.C.
McClellan, William Alfred	Md.	McCray, Ralph Emerson	Iowa
McClendon, Frances Lorraine	Pa.	McCready, Doris Pearl	Maine
McClendon, James Robert	D.C.	McCright, Charles Edward	D.C.
McClendon, Nelle Louise	Pa.	B.S. 1948, The George Washington University	
McCleskey, Ben Conner	D.C.	McCrone, Andrew Matthew	Pa.
McClellan, Jinnie Pauline	Va.	B.S. 1940, University of Pennsylvania	
McClellan, Maxine Margaret	Calif.	McCrone, Thomas Joseph	Pa.
McCleskey, Owen Thomas	Ohio	McCubbin, James Melvin	D.C.
B.S. 1932, Ohio State University		McCubbin, John Grayson	D.C.
McCloskey, Sylvester John A.B. 1949, The George Washington University	Pa.	B.M.L. 1949, The George Washington University	
McClore, Rex Clark	D.C.	McCubbin, William Parke	D.C.
McClore, William Pendleton	D.C.	McCue, Ignatius Lawrence	Ohio
B.S. 1949, University of Pennsylvania		McCue, John Stuart	N.Y.
McClure, Gregor Harper	Va.	McCollagh, William Robert	Md.
B.S. in E.E. 1931, M.S. 1932, University of Maryland		McCulloch, John Kamey	Ohio
McClure, Nancy Ann	N.J.	McCullough, Frank Witcher, Jr.	W Va.
McClure, Robert Westcott	Md.	A.B. 1943, Tulane University	
McClure, Oscar D., Jr.	Mo.	McCullough, Herbert Carlton	D.C.
A.B. 1943, University of Kansas City		McCullough, Richard Cornwell	D.C.
B.S. 1937, Webb Institute of Naval Architecture	N.J.	McCullough, William Harrison	Md.
McComb, Archibald Howell, Jr.		McCully, Cyrus Harold	Va.
B.S. 1937, Webb Institute of Naval Architecture		A.B. 1934, A.M. 1935, Colorado State College of Education	
McComb, Margaret Smith	N.J.	McCune, Violet Kellogg	D.C.
McComb, Grant Wilbur	Va.	A.B. 1948, The George Washington University	
McConaughay, James William	Calif.	McCurdy, Jayneleen	D.C.
B.S. 1939, United States Naval Academy		McCurry, Helen Leonard	D.C.
M.S. 1946, California Institute of Technology		McCutchen, Sara Kennedy	S.C.
McConnell, Mary Alice	Fla.	McCutcheon, Sara Barbara	Md.
A.B. 1932, Hollins College		B.S. 1948, University of Maryland	
McConnell, Dorella Mae	Va.	McDade, William Frank, Jr.	Va.
McConnell, Elsie Ruggs	D.C.	McDaniel, Anna Toms	N.C.
A.B. 1929, Davidson College		A.B. 1945, Meredith College	
L.L.B. 1934, University of Virginia		McDaniel, Ernest Glenn	Md.
McConnell, Elizabeth C.	D.C.	A.B. 1936, Fairmont State College	
A.B. 1941, Pennsylvania State College		McDaniel, James Theron	Calif.
McConnell, Henry James	Ill.	McDaniel, John Bennett	Ky.
McConnell, John Aloysius	Va.	B.E.E. 1946, University of Louisville	
McConnell, John Wilson	Mont.	McDaniel, John Milton	Tenn.
McConnell, Leo Joseph	D.C.	McDaniel, Roy Harmon	Va.
McConnell, Richard D.	Va.	McDaniel, T. J.	Tex.
McConnell, Robert Perche	D.C.	McDaniel, Walter Ray	N.C.
McConnell, Russel Clair	Pa.	McDaniels, James Ellis	D.C.
McCool, Cornelius Joseph	Pa.	McDermott, Delia Ethel	Mass.
McCord, Franklin Otto	Iowa	McDermott, Edward Park	Va.
McCord, Lloyd	Va.	B.S. in E.E. 1947, University of Arkansas	
B.S. 1925, Southern State Teachers College		McDermott, Jack Chipman	Tex.
		McDermott, Norbert Coyne, Jr.	Pa.
		McDermott, Thomas Joseph	D.C.

McDermott, William Thomas	Mass.	McGann, Marjorie Louise	D.C.
B.S. 1935, University of New Hampshire		McGannon, William Arthur	Ohio
M.S. in Ed. 1936, Boston University		McGarry, Barbara Darnell	D.C.
McDevitt, John Newman	Md.	A.B. 1944, Radcliffe College	
McDili, Thomas Kapp	Ohio	A.M. 1947, Columbia University	Ill.
A.B. 1948, Miami University		McGee, Charles Edward	
McDonald, Brian Thomas	Va.	B.S. in Ed. 1934, Northern Illinois State Teachers College	Md.
McDonald, Carl Edward	Md.	McGill, George	
McDonald, Dianys Frobisher	D.C.	A.B. 1945, Furman University	D.C.
McDonald, Donald Deon	D.C.	McGilvery, Francis Edward	D.C.
McDonald, Duncan Keith	D.C.	McGinn, Leo Joseph	Va.
McDonald, Ethel Raynor	Va.	McGinnis, Norman Francis, Jr.	D.C.
A.B. 1939, University of Hawaii		McGinnis, Robert Allen	Pa.
McDonald, James Joseph, Jr.	Va.	McGloft, William Richardson	Va.
McDonald, Lynette	Conn.	McGoldrick, Joseph Aloysius	
McDonald, Ned Jarvis	S.C.	B.S. 1932, United States Naval Academy	R.I.
B.S. 1948, Duke University		McGovern, Lawrence Edward	Iowa
McDonald, Oliver Gene	D.C.	McGowan, Melvin Joseph	
McDonald, Oris Paul, Jr.	W.Va.	A.B. 1949, Coe College	Mass.
McDonald, Raymond Joseph	D.C.	McGowen, William Henry	N.J.
McDonnell, Joseph Vincent	Ohio	McGrail, Edward Hugh	
McDonough, John Joseph	N.Y.	A.B. 1941, St. Peter's College	
McDonough, Joseph James	D.C.	LL.B. 1948, Georgetown University	Mass.
McDonough, Raymond John	N.Y.	McGrath, Charles Joseph	N.Y.
McDonough, Russell Charles	Mont.	McGrath, Daniel Gerard	
McDonough, Thomas Cornelius	Calif.	LL.B. 1929, LL.M. 1931, St. John's University, N. Y.	N.Y.
A.B. 1949, Catholic University of America		McGrath, Mabel Leahy	Md.
McDonough, William Wallace	Va.	McGrath, Malcolm Cushing	
A.B. 1948, University of Virginia		B.S. 1936, United States Naval Academy	D.C.
McDowell, Duane Orville	S.D.	McGrath, Peggy Anne	N.Y.
McDowell, Janet Beverly	D.C.	McGrath, Thomas Joseph	Va.
McDowell, Mildred Ann	D.C.	McGraw, Carrington Belt, Jr.	
McDuffie, Lois June	Va.	A.B. 1949, The George Washington University	Ky.
McDuffie, Rhoda Edgar	Md.	McGraw, Robert C.	Ark.
A.B. in Ed. 1935, University of South Carolina		McGregor, John Grestor	
McDugald, Jesse	Fla.	A.B. 1949, Stanford University	Va.
McElhanev, John Clair	Pa.	McGrew, Clifton Jackson, Jr.	Pa.
McElhanev, Mary Katherine	N.Y.	McGrew, William Michael	Va.
McElrath, Miles Kenneth, Jr.	Conn.	McGuff, LaDonna Lee	W.Va.
McElroy, Anita Tillman	Kans.	McGowan, Francis Joseph	Me.
McElroy, James Thomas	Conn.	McGuire, Donald	D.C.
McElroy, Jenny Emma	Va.	McGuire, Ethel Lucille	Va.
McElroy, John Harper	Ala.	McGuire, Francis James	Va.
B.S. 1929, United States Naval Academy		McGuire, James A.	N.Y.
McElroy, Virgil Maurice	Kans.	McGuire, James Jackson	Mass.
A.B. 1936, LL.B. 1938, University of Kansas		McGuire, Kenneth James	D.C.
LL.M. 1940, The George Washington University		McGuire, Ruth Evelyn	Pa.
McElvain, Mary Viola	Ill.	McGurk, Vincent William	Va.
A.B. 1942, Mount Mary College		McGurrin, James Joseph	
McEnroy, Ursula Dolores	Mass.	A.B. 1949, The George Washington University	D.C.
McEntee, Ann Elizabeth	D.C.	McHale, Robert Berger	D.C.
McEntee, John Cornelius	Md.	McHenry, Charles Joseph, Jr.	Va.
McFadden, Archibald George W.	Va.	McHugh, Evelyn Marie	Va.
B.S. 1942, United States Naval Academy		McHugh, James Morris	
McFadden, Douglas Howard	N.Y.	A.B. 1936, The George Washington University	Pa.
McFadden, William Dodge	Md.	McHugh, John Richard	Va.
McFadyen, Ross Musgrove	S.C.	Mellhatten, David White	D.C.
McFarland, Alice Blackwell	Va.	McInteer, Rachel Catharine	
McFarland, Edgar Elijah	W.Va.	B.S. 1932, Columbia University	D.C.
McFarland, Frank A.	Va.	McIntosh, Mary Louise	
McFarland, Hal Horace M., Jr.	D.C.	A.B. 1946, American University	D.C.
B.S. 1940, Ohio State University		McIntosh, Robert Arthur	N.C.
McFarland, Thomas James	Pa.	McIntosh, Ruth Janice	N.C.
McFolin, Roy Lee	Tenn.	McIntyre, Carl Franklin	D.C.
McGandy, Edward Lewis	Md.	McIntyre, Ernest Richard	
McGann, Malcolm Hobart, Jr.	Mass.		
A.B. 1942, Haverford College			

McIntyre, Fred Louis A.B. 1948, The George Washington University	Va.	McLaurin, Lillian Catherine A.B. 1937, LL.B. 1939, Vanderbilt University	Miss.
McIntyre, Joseph Alexander	Kans.	B.S. in L.S. 1941, George Peabody College for Teachers	
McIntyre, Martha Clementine	Pa.	McLaurin, Turner Sheppard	Va.
McIvor, Lillie Mae B.S. 1938, Radford College	Va.	B.S. 1945, Mississippi College	N.C.
McKay, Cameron Lawrence	Minn.	McLean, Charles Graham A.B. 1948, The George Washington University	
McKay, Fred James	N.J.	McLean, Dorothy M.	D.C.
McKay, Joseph Patrick	Mass.	McLean, George Willis	Ga.
McKee, Francis Alvin A.B. 1942, Knox College	D.C.	McLean, Gordon Alexander	D.C.
McKee, James Oakes	Ill.	McLean, John Churchill	Ala.
McKee, Kemper Sherwood	W.Va.	McLean, William West	D.C.
McKee, Lavuis Annette	Va.	McLear, John Skelton	Ark.
McKeehan, John Badger	Conn.	McLelland, Gordon B. A.B. 1942, Princeton University	Md.
McKeel, Charles Baynor	N.C.	McLeod, Jean Frances	Md.
McKeith, Alfred Bertram	Iowa	McLeod, Richard Norman	Md.
McKellips, Harold Gilman, Jr.	Calif.	McLeod, William Earl	N.C.
McKelway, William Prentiss A.B. 1943, Washington and Lee University	D.C.	McLoughlin, Christopher James	N.Y.
McKenna, Helen Marie	D.C.	McLucas, Charles Francis, Jr.	Pa.
McKenna, Mary Patricia	D.C.	McLynn, James Michael	D.C.
McKenzie, Inez Calle	Va.	McMahon, Hardy Lee, Jr. B.S. 1948, Michigan State College	Tenn.
McKenzie, Lawson Morell B.S. 1934, A.M. 1938, The George Washington University	Md.	McMahon, Frederic Darrard	D.C.
McKenzie, Margaret Mary	Ill.	McMahon, Kathryn Mary	N.Y.
McKeon, Alfred Jerome	Va.	McMahon, Thomas Anthony	N.J.
McKeon, Arthur Thomas B.M.E. 1948, Stevens Institute of Technology	D.C.	McMain, James Alexius A.B. 1942, Georgetown University	D.C.
McKeon, Charles Francis	Conn.	McMakin, William Howard	D.C.
McKeon, Matthew Bernard	Va.	McMann, Phyllis Maria Rebecca	Maine
McKeown, Thomas Patrick	Md.	McMann, John Washel B.S. in M.E. 1938, United States Naval Academy	D.C.
McKeenan, Frank M. A.B. 1945, Ed B. 1936, A.M. 1939, University of Cincinnati	Ohio	McManus, Louise Kessler	D.C.
McKibben, Mason Edward, Jr.	Colo.	McMeel, John Wallace	Md.
McKimsey, Frank Edward	Ark.	McMichael, Lottie Swope B.S. 1915, Madison College	Va.
McKinley, Alfred Machell	D.C.	McMillan, Robert Hampton	D.C.
McKinley, Francis	Utah	McMillan, William Walter	D.C.
McKinley, Royce Baldwin A.B. 1942, University of Michigan LL.B. 1948, Harvard University	Md.	McMorrow, Robert Gilmore	D.C.
McKinney, George Clagett	D.C.	McMullen, Alexander Ross	N.Y.
McKinney, Nan Honora Katherine	Va.	McMullen, Thomas Richard A.B. 1946, The George Washington University	D.C.
McKinney, William Ralph	Ky.	McMullan, Ivy Harpole	Miss.
McKinnis, William T. A.M. 1949, The George Washington University	N.D.	McMurphy, Kathleen Burrows A.M. 1948, University of Maryland	Md.
McKneely, Myrtidee Marilyn	Va.	McMurray, Delzell Barthel	Va.
McKnight, Michael Joseph	D.C.	McMurray, Hazel Abernethy	S.C.
McLean, Edward Phillip	D.C.	McNabb, Gertrude Elliott A.B. 1947, The George Washington University	D.C.
McLane, Donald Cecil, Jr.	Va.	McNairy, John Vickory B.S. 1937, Guilford College	Va.
McLaren, Margaret Campbell	D.C.	McNally, Eileen Elbert	Va.
McLaughlin, Arthur Ellsworth B.S. 1939, North Dakota Agricultural College	N.D.	McNally, James Joseph, Jr.	Va.
McLaughlin, Florence Westcott B.S. 1931, Michigan State Normal College	Va.	McNally, Marietta Clara B.S. 1947, Temple University	D.C.
McLaughlin, Hugh Daniel, Jr.	D.C.	McNally, Patricia Louise Isabel	Va.
McLaughlin, Marjorie Audley	D.C.	McNamara, James Desmond B.S. 1940, New York University	Va.
McLaughlin, Mary Maumlian	D.C.	McNamara, Jerome Talan	D.C.
McLaughlin, Monica Mariel	D.C.	McNamara, John Edward, Jr.	D.C.
McLaughlin, Robert Hughes	S.D.	McNamara, Richard Vaughan	Iowa
McLaughlin, William Francis A.B. 1943, Swarthmore College	Pa.	McNamee, Gilbert Wilson	Va.
	Va.	McNamee, Patricia E. A.B. 1944, Immaculate Heart College	Nev.
		McNaney, William Edward	Md.
		McNeely, James Edward A.B. 1949, University of Missouri	Mo.

McNeil, George Elroy, Jr. A.B. 1942, The George Washington University	Md.	Medford, Charles Eugene Medina, Armando Medvack, Anne Hope B.S. 1943, Pennsylvania State Teachers College, California	Va. Md. Pa.
McNeill, John Joseph McPhaul, Thomas Francis McPherson, Clara Myce McPherson, James Willis, Jr. LL.B. 1949, The George Washington University	D.C. D.C. D.C. Ohio	Medwick, Emma Mehan, Francis Raymond Meehan, Robert Howard Meeker, John Harbeck A.B. 1947, Drew University	D.C. Md. Va. N.J.
McPherson, Trent Ohio McPhatiny, Harry Simpson, Jr. A.B. 1947, The George Washington University	Md. Pa.	Meekins, William Lawrence Meerkreebs, Samuel B.Eng. 1943, University of Toledo	N.C. Ohio
McNela, James Ralph McNell, Philip Myerson McNulty, Joseph John McNulty, Oliver Leone McNulty, Paul Edmund McNulty, Philip Lambert McOwen, John Joseph A.B. 1946, Marshall College B.S. 1946, North Dakota Agricultural College	W.Va. N.Y. Pa. D.C. D.C. Iowa D.C.	Meese, Kenneth Jordan Meuse, Norman Sayford Meuse, Vernon Edgar Meyella, Ella A.B. 1948, The George Washington University	Md. Md. Okla. Pa.
McPhaul, Dana Stanger M.Phaul, Harvey Franklin M.Phaul, John E. Jr. McQuarry, Dennis Everett McQueen, Robert Kurt A.B. 1944, The George Washington University	D.C. D.C. Tenn. Ky. Iowa	Mehrad, Ahmed A.B. 1936, A.M. 1937, University of Paris Mehrens, Inez Kozman A.B. 1924, Midland College A.M. 1941, University of Southern California	D.C. D.C.
McQuade, Robert Glenn, Jr. McQuade, William Thomas A.B. 1947, Emory and Henry College McRae, John Edwin B.Ch.E. 1948, University of Detroit McRae, Luther Cecil A.B. 1927, M. in Ed. 1928, Duke University	Ky. Va. Md. Va.	Meier, Albin Richard Meier, Frederick Peter Meier, Jean Ulrich Meier, Robert Willy Meier, Sally Witten Meigs, Edward Douglas Meirowitz, Morris Meiselman, Sherman Morton Meisels, Milton A.B. 1918, University of Wisconsin	D.C. N.Y. Switzerland D.C. D.C. Idaho N.I. D.C. D.C.
McRae, Edward James, Jr. McResnick, Zach Arnold B.S. 1942, Agricultural and Mechanical College of Texas McRory, William Francis McSoud, Clovis Fred A.B. 1949, The George Washington University	Mich. Tex. Ga. Ohio	Meissner, Charles Robert Meissner, Paul Meister, Malcolm Mele, Dorothy Cecilia Melendez, Maria Teresa Melheim, Arnold Curtis Mellema, Bendert Henry Mellen, David Ralph Mellen, Robert David A.B. 1947, The George Washington University	D.C. D.C. N.Y. D.C. D.C. D.C. Mich. N.Y. Va.
M. Teer, Hilda Doris M. Terman, Jeffrey M. Ves, Ellen Teresa M. Walker, Robert Edwin M. Warr, Joseph Russell A.B. 1948, The George Washington University	D.C. Va. D.C. D.C.	Mellinger, Harry Albert Mellinger, Walter Sylvester A.B. 1946, San Diego State College Mellon, Donald Hale Mellor, John Edward A.B. 1942, The George Washington University	Va. Calif. D.C. D.C.
McWhorter, Harry Stanley Mendler, Norward A. B.S. in C.E. 1914, Virginia Military Institute Meadows, Jack Wilbur Meadows, Lottie Electra Meadows, Richard Carl Meadows, Waldens Hastings Meagher, Mary McRae Meakin, Francis Hardie II Meana, John Donald Meaney, Thomas Francis B.S. 1940, Georgetown University	Md. W.Va. D.C. Va. D.C. D.C. D.C. D.C. D.C.	Meloy, John Arthur Melton, William Roscoe Melvin, Flavell Bryan, Jr. Melvin, Harry Davis Melvin, Mary Louise Memmer, Jordan Ronald Mendeloff, Henry B.S. 1916, M.S. in Ed., College of the City of New York	Md. Va. Va. N.C. D.C. D.C.
Meana, Robert Harvey Meara, Francis Leo Mears, John Kenneth Mears, John Stephen, Jr. A.B. 1940, The George Washington University Mears, Richard Oscar	Mass. D.C. D.C. Ind. Tenn.	Mendelsohn, Bernice Ruth Mendelsohn, Sydney Henry Mendelson, Anna A.B. 1942, Hunter College Mendelson, Michael Mendenhall, John Wilson Mendenhall, Margaret Harrilyn	D.C. Pa. D.C. D.C. Ohio Tenn.

Meneley, Reynold Charles, Jr. B.S. 1949, Pennsylvania State College	Va.	Meyer, Bertha Marie	Md.
Menelee, Karl Donald	D.C.	Meyer, Colburn Webster	D.C.
Mensh, Herbert	D.C.	Meyer, Carolyn Watter	D.C.
Merat, Parviz	Iran	Meyer, George Hickey	N.J.
Mercer, Carol Richardson	D.C.	Meyer, Harry	D.C.
Mercer, Janice Jeanne	Va.	Meyer, Ival Loren	Nebr.
Mercer, Joseph Jackson, Jr. A.B. 1948, Emory University	Ga.	Meyer, Karl Rorie	Ohio
Merchant, Edward Joseph	D.C.	A.B. 1947, Westminster College	
Merck, Mary Christine	D.C.	Meyer, Katherine Freeston	Md.
Mercogliano, Charles Eugene	D.C.	Meyer, Kathleen Faith	Va.
Mercogliano, Victor Mario	D.C.	Myer, Leo Herbert	Va.
Meredith, Ellis Edison	D.C.	Meyer, Louise W.	Tex.
Merendino, University of Chicago	N.Y.	Meyer, Myrtle Isabelle	D.C.
Merendino, John Jerome	D.C.	B.S. 1942, Rhode Island State College	Ohio
Mercle, Harold Francis	N.Y.	Meyer, Raser Henry	
L.L.B. 1943, The George Washington University	D.C.	A.B. 1939, Westminster College, Pa.	
Merrill, Ralph James	N.J.	A.M. 1941, University of Chicago	N.Y.
Merrony, Louis Roy	Tex.	Meysing, Catherine Corina	
Merox, James Forbes	Va.	A.B. 1937, Sevan Hill College	N.D.
Messell, Richard Yates	Utah	Meyers, Beverly Anne	N.Y.
Messell, Robert Franklin	D.C.	Meyers, Daniel	D.C.
Merrill, Virginia	N.Y.	Meyers, Hugh Truman	D.C.
Merrim, Lee Forrest	D.C.	Meyers, Leonard Bernard	Md.
Merrill, Eugene Clifford, Jr. A.B. 1949, University of New Mexico	Maine	Meyers, Marjorie Castle	
Merrill, Evelyn-Merrill	Va.	L.B. 1949, Indiana College	D.C.
B.S. 1949, University of Virginia		Meyerson, Carla Ruth	N.Y.
Merrill, Mildred Austin	Va.	A.B. 1943, University of Michigan	
Merritt, Arthur Donald	D.C.	Meyrowitz, Alvin Abraham	
A.B. 1949, The George Washington University		A.B. 1938, Cornell University	
Merritt, Everett Laverne	D.C.	M.B.A. 1941, New York University	Md.
Merritt, Fontaine Lee	Va.	Meyrowitz, Gladys Blossom	Md.
Merritt, Hubert Whitten	Va.	B.S. 1949, New York University	
Meseroll, Ida Adele	N.J.	Meyrowitz, Leila	
A.B. 1943, Albright College		A.B. 1949, The George Washington University	
Messer, Harold Madison	Md.	Michael, Irving	D.C.
A.M. 1946, Columbia University		Michael, Ray Bertram	Md.
Messing, Nadia Sabul	N.Y.	Michael, Bernice	D.C.
Messing, Estelle Rose	D.C.	Michael, Michael Nicholas	N.Y.
Merritz, Stanley	N.Y.	Michael, Joseph Leonard	Pa.
A.B. 1949, College of the City of New York		Michael, Joseph Richard	Maine
Metaxatos, Jerry V.	D.C.	Michael, Edward Andrew, Jr.	N.Y.
Metz, Louis Poole	D.C.	B.S. 1948, United States Naval Academy	
Metz, Richard	D.C.	Michaelson, Esther Cain	Va.
A.B. 1947, A.M. 1948, University of Denver		B.S. 1941, University of Virginia	
Metzger, David Hollway	N.Y.	A.M. 1948, The George Washington University	
Metzger, Joseph Louis, Jr.	Maine	Michaelson, Edward	Va.
Metzger, Lawrence Bennett	N.Y.	Michaelson, Herman John	W.Va.
Mettenet, William Joseph	Pa.	Michaelson, Joseph	Va.
A.B. 1942, University of Pittsburgh		Michael, Ruth Marie	Iowa
Metz, Donald William	D.C.	Michael, Vera Edward	Maine
Metzerott, Heursene Kirk	D.C.	Michaelson, Glen Phyllis	D.C.
Metzerott, Kirk Oliver	Minn.	A.B. 1945, The George Washington University	
A.B. 1948, The George Washington University		Michelsen, Paul Frederick	D.C.
Metzger, Clyde Christian	Pa.	Michelson, Samuel	N.Y.
B.S. 1948, Pennsylvania State College		A.B. 1949, The George Washington University	
Metzger, Heloise M. Belle	D.C.	Michie, James Reginald	D.C.
Metzger, Joseph Francis	Md.	Michie, Louis Joseph	Del.
Metzner, Norma R.	D.C.	A.B. 1941, University of Delaware	
A.B. 1946, University of Wisconsin		M.S. 1949, The George Washington University	
Menshaw, Dorothy Ruth	D.C.	Michalski, Zigmund Sagittarius	Conn.
B.S. in L.S. 1946, Louisiana State University		B.S. 1949, American International College	
Meyer, Ardo Xanar	Nebr.	Michelsen, Carolyn Ann	Va.
		Michelsen, Frank Ray	Va.
		Mickler, Thomas Albert	Pa.
		Miko, Helen Louise	Pa.
		Mickum, Ann Love	D.C.

Middlemas, Burton Yeager	Va.	Miller, Christine Haines	D.C.
Middleton, Edward Duncan, Jr.	D.C.	B.S. 1941, Middle Tennessee State College	Ohio
B.S. 1944, United States Coast Guard Academy	D.C.	Miller, David Robert	Minn.
Middleton, Glenn Arthur, Jr.	D.C.	B.S. 1949, University of Akron	D.C.
Mudland, Marvin Gilbert	D.C.	Miller, Doris Elaine	Calif.
Miele, Albert John	Wis.	A.B. 1948, University of Minnesota	D.C.
Miesfeld, Roger Randolph	Wis.	Miller, Doyle Nate	D.C.
B.S. 1949, University of Wisconsin	Va.	Miller, Dudley Ward	Calif.
Miguel, Geronimo	Va.	B.S. 1949, Georgetown University	Md.
Michall, John J.	Pa.	Miller, Edna Emily	Pa.
A.B. 1949, Franklin and Marshall College	Hawaii	A.B. 1948, Western Maryland College	Pa.
Miho, Katsugo	D.C.	Miller, Edwin Cyrus	Pa.
A.B. 1949, University of Hawaii	D.C.	A.B. 1949, Muhlenberg College	D.C.
Mikasa, Isabelle Mary	Pa.	Miller, Elinora LaVerna	D.C.
B.S. 1946, Simmons College	D.C.	Miller, Elmon Adams, Jr.	D.C.
Mikusinski, Wilhelmina Mae	D.C.	Miller, Esther Lydia	D.C.
Milam, Robert Howard	N.Y.	Miller, Felicia Mary	D.C.
Milano, Dominick Joseph	Va.	A.B. 1946, A.M. 1948, The George Washington University	D.C.
Milbourn, Gloria McDonough	D.C.	Miller, Genevieve C.	Va.
B.S. 1947, University of Virginia	D.C.	B.S. 1941, Western Reserve University	D.C.
Milbourn, Louise	Md.	Miller, George William	Va.
Milburn, Chester Franklin	Md.	Miller, Gerald Joseph	Va.
Milburn, Elinor Hope	Md.	Miller, Gordon Henry, Jr.	Va.
B.S. 1933, Wilson Teachers College	Md.	Miller, Grant William	N.Y.
Milburn, George Ernest	Pa.	B.S. 1949, University of Washington	D.C.
Milburn, Virginia St. Clair	Ala.	Miller, Henry Leroy	D.C.
Milburn, Vivian Elaine	D.C.	Miller, Herbert J.	D.C.
A.B. 1947, Baylor University	Va.	Miller, Herbert John, Jr.	D.C.
Milby, Katherine Rebecca	D.C.	A.B. 1948, The George Washington University	D.C.
B.S. 1947, Virginia State Teachers College, Farmville	Va.	Miller, Herman P.	D.C.
Miles, Edward Michael	Va.	B.S. 1942, College of the City of New York	D.C.
B.S. 1930, University of Washington	Va.	Müller, Howell Douglas	D.C.
L.L.B. 1935, Columbia University	D.C.	D.V.M. 1941, Agricultural and Mechanical College of Texas	D.C.
Miles, Nelle H.	D.C.	Miller, Ida Schuppman	Gr.
B.S. in Ed. 1926, Ohio State University	D.C.	A.B. 1947, The George Washington University	Md.
Miles, Walter Leonard, Jr.	D.C.	Miller, Iler Monroe	D.C.
Miles, Wandaleen Dean	D.C.	Miller, Irvin Randolph, Jr.	Va.
B.S. 1941, Radford College	D.C.	Miller, Jean Agnes	D.C.
Miletich, Ann Theresa	Okl.	Miller, Jerry Allan	Va.
Mileur, Alfred Donald	Va.	Miller, John Alexander	Va.
Miley, Charles Edward, Jr.	Mo.	Miller, John Clayton	Md.
B.S. 1935, Roanoke College	D.C.	A.B. 1930, A.M. 1933, Oberlin College	Calif.
Millett, William Benjamin	Calif.	M.S. 1940, Syracuse University	Calif.
Miltzer, Gustave David	D.C.	Miller, Keith Hugh	W.Va.
Millis, Glen Collins	Md.	Miller, Leland Henry	Va.
Millard, Anne Marie	Va.	A.B. 1942, State College of Washington	S.C.
Miller, Adalbert Ellsworth	Va.	Miller, Leonard Lee	D.C.
Miller, Abel Rohrbaugh, Jr.	Mass.	Miller, Lewis Paruch	D.C.
Miller, Albert	Va.	Miller, Lucille Mary	D.C.
Miller, Alfred Smith	Iowa	A.B. 1945, Limestone College	D.C.
Miller, Allen Howard	N.Y.	Miller, Lynn Harry	Mass.
Miller, Andrew John	Calif.	Miller, Margaret Elizabeth	Va.
A.B. 1949, The George Washington University	D.C.	A.B. 1948, Bryn Mawr College	D.C.
Miller, Ann Margaret	D.C.	Miller, Mary	Md.
Miller, Anne Louise	Mich.	Miller, Maurice Myles	D.C.
Miller, Bernard Leo	Minn.	B.S. 1948, The George Washington University	D.C.
Miller, Betty Lee	D.C.	Miller, Melvin Eugene	Md.
Miller, Caroline Parkinson	Iowa	Miller, Myron Meredith	D.C.
B.S. 1941, The George Washington University	Pa.	B.S. 1948, Oklahoma Agricultural and Mechanical College	Md.
Miller, Carolyn Ann	Mass.	Miller, Nathan	Pa.
Miller, Charles Harrison	D.C.	Miller, Norman Robert	Md.
Miller, Charles Phillip	Mich.	Miller, Olin Columbus	D.C.
Miller, Charles Robert	D.C.	B.S. 1942, A.M. 1948, Ed.M. 1949, George Peabody College for Teachers	
Miller, Charles V.			
B.S. in F.E. 1945, Carnegie Institute of Technology			

Miller, Paul Nunn	D.C.	Mills, Louise Helene	D.C.
Miller, Rachel Craft	Pa.	Mills, Mary Louise	N.Y.
Miller, Ralph Jewart	D.C.	A.B. 1945, Bryn Mawr College	
Muler, Richard Bellum	D.C.	Mills, Ruth Elizabeth	Va.
A.B. 1948, University of Maryland		Mills, Walter Wylie III	Va.
Miller, Richard Eugene	D.C.	Milisp, Keith Duane	Pa.
Miller, Robert Earl	Va.	A.B. 1948, Grove City College	
Miller, Robert Junior	Ind.	Milner, George R.	Okl.
Miller, Robert Lee	Va.	A.B. 1947, University of Oklahoma	
Miller, Robert Preston	N.Y.	A.M. 1949, Columbia University	
B.S. in M.E. 1943, Cornell University		Milor, Rufus Edward	D.C.
Miller, Robert Thomas	N.J.	Milos, John Francis	Md.
B.S. 1949, Rutgers University		A.B. 1941, Dartmouth College	
Miller, Robert Wayne	N.C.	A.M. 1942, Columbia University	
Miller, Rodney Arthur	Md.	Milso, William Edward	D.C.
A.B. 1949, University of Pennsylvania		Mossman, George	D.C.
Miller, Roy Hamilton	D.C.	Mitchew, Willoughby Lamar	D.C.
Miller, Sally Isabelle	D.C.	A.B. 1944, Mercer University	
Miller, Samuel Duncan	D.C.	Minear, Verna Howard	Nev.
Miller, Seymour Marvin	D.C.	A.B. 1947, University of Denver	
Miller, Sydelle Ellis	N.Y.	Miser, Leon Ruth	D.C.
Miller, Theodore Arnold	S.C.	Miser, Newton Arthur	D.C.
Miller, Vard Thomas	Pa.	Mises, Kenneth Seymour	N.J.
B.S. 1947, East Tennessee State College	Tenn.	Misk, James Anthony	D.C.
Miller, Virginia Jane	Ohio	Miskler, Whitney Sheldon	Conn.
A.B. 1945, College of Wooster		Misser, Delbert Massey	Del.
Miller, Walter Wallace	D.C.	A.B. 1945, University of Delaware	
Miller, Warren, Claude	D.C.	Minnich, Mary Jane	Ohio
Miller, William Francis	Pa.	A.B. 1949, Seton Hill College	
A.B. 1949, The George Washington University		Munnich, Robert Evans	Pa.
Miller, William Munroe	N.Y.	Munnich, John Bradley	Va.
B.S. 1948, Baldwin-Wallace College		A.B. 1945, Amherst College	
Miller, William W. Loan	D.C.	Munnich, Ray Parmelee	Wash.
Mietze, I. Roy Francis	Conn.	Munnich, Richard W.	Ohio
Milican, Archer Smithsonian	D.C.	Munnich, I. Lombard Bingers	Va.
A.B. 1944, Randolph-Macon College		Munoz, Robert Center	Md.
Milman, John Charles	D.C.	Munoz, Sophia Crouch	Va.
Milman, Joseph Robert	Md.	Munoz, J. Pablo	Italy
Milman, William Francis, Jr.	N.Y.	Doctor of Political Sciences 1941, University of Rome	
A.B. 1947, Colgate University		Minsky, Marmorate Minsky	Mass.
Mills, Hugh Lowell, Jr.	Tex.	B.S. in Ed. 1948, Boston Teachers College	
B.S. in E.E. 1945, Southern Methodist University		Mintburn, Marjorie Frances	D.C.
M.S. in E.E. 1947, University of Texas		B.S. 1945, University of Nebraska	
Millman, Max Roland	N.Y.	Mintburn, Ramona Cornelia	Oreg.
B.S. 1947, College of the City of New York		Minton, George	D.C.
Mills, Anne Louise	D.C.	A.B. 1948, The George Washington University	
Mills, Barbara Elizabeth	Va.	Mintz, Salnev	Mich.
Mills, Carl	D.C.	A.B. 1948, Ohio University	
Mills, Cathryn Lucille	Va.	Mintz, Salnev I.	Ill.
Mills, Felice Columbia	D.C.	Mons, Pierre Riccardo	D.C.
Mills, George F.	D.C.	Misser, Ruth	N.Y.
Mills, Gertrude Harmon	N.Y.	Misch, Chilton Luther	Pa.
B.S. in Ed. 1941, New York State Teachers College, Buffalo		A.B. 1948, The George Washington University	
A.M. 1945, Columbia University	Va.	Mise, Raymond Winfield	D.C.
Mills, J. Watter III	Ohio	Misek, Albert Joseph	D.C.
Mills, Jack Leroy	D.C.	Misey, Edward Gabriel	Wis.
Mills, James Leroy, Jr.		A.B. 1940, A.M. 1945, University of Wisconsin	
B.S. 1944, Webb Institute of Naval Architecture	Ill.	Misfeldt, William Duane	Nebr.
Mills, James Roy, Jr.		Mishton, Frank Henry	Va.
L.I.B. 1947, De Paul University		A.B. 1939, Columbia University	
Mills, James Shale	D.C.	A.M. 1942, The George Washington University	
Mills, Joan	Md.	Miskell, Robert Joseph	N.Y.
Mills, John Everette	N.J.	B.S. 1949, Georgetown University	
Mills, John Leonard	D.C.	Miskovsky, Milton Carl	Ill.
Mills, Katherine Jayne	D.C.	B.S.F. 1948, M.F. 1949, University of Michigan	
Mills, Lee George	Va.	Misner, Virginia Bernice	Nebr.

Misson, Anne Josephine	D.C.	Moffett, Ethel Agnes	Va.
Mitchell, Anita Floyd	D.C.	B.S. in Ed. 1936, Brooklyn College	N.Y.
Mitchell, Charles Bradford	D.C.	Moglen, Norman	
Ph.B. 1928, A.M. 1929, Wesleyan University		A.B. 1940, College of the City of New York	Pa.
A.M. 1938, Ph.D. 1939, Harvard University		Mogul, Rubin	
Mitchell, Charles Franklin	D.C.	A.B. 1948, Pennsylvania State College	N.D.
Mitchell, Clyde Albert	Va.	Mohagen, Edna Alice	
Mitchell, David Lee	Fla.	B.S. 1937, The George Washington University	India
Mitchell, Edward Alexander, Jr.	D.C.	Mohan, Krishna	
A.B. 1944, University of Virginia		A.B. 1945, University of Delhi	
Mitchell, Frank Raymond, Jr.	Va.	A.M. 1947, University of Madras	D.C.
Mitchell, John Joseph	Va.	Mohler, Jeanne Claire	D.C.
Mitchell, Joseph McDowell	Md.	Mohler, John Robbins	D.C.
Mitchell, Lloyd Brooks	Okla.	Mohler, Wilmer Worthington	D.C.
M.S. 1948, Oklahoma Agricultural and Mechanical College		Mohs, Mona Jane	
Mitchell, Marguerite Amy	Va.	B.S. 1943, Wisconsin State Teachers College, La Crosse	N.Y.
A.B. 1949, The George Washington University		Mohr, Paul James	Va.
Mitchell, Margorie Crawford	Va.	Mohr, Rosamond Greenlee	La.
A.B. 1933, Montana State University		Moise, Rudely, Jr.	Va.
Mitchell, Mary Christine	Ala.	Molander, Earl	Mo.
Mitchell, Mary Eddie	D.C.	Mollick, Jean	N.C.
Mitchell, Mary Eleanore	D.C.	Molloy, Davies Warfield	
Mitchell, Mary Louise	D.C.	B.S. 1940, Villanova College	Ill.
Mitchell, Mary Lynn	D.C.	Moloney, John Francis	
A.B. 1948, The George Washington University		B.S.S. 1949, Georgetown University	D.C.
Mitchell, Nan	D.C.	Molyneaux, John William	
Mitchell, Robert Cleo	D.C.	A.B. 1939, The George Washington University	D.C.
Mitchell, Robert Eugene	D.C.	Monaco, Anthony John	Ohio
Mitchell, Robert Warren	Pa.	Monaco, Dalio Hugo	Pa.
Mutoma, Edwin Yoshito	Md.	Monaghan, Anna Elizabeth	
B.S. in F.E. 1947, Case Institute of Technology		B.S. 1948, Pennsylvania State Teachers College, Bloomsburg	Va.
Mizell, Fenton Vivian	Md.	Monaghan, John Thomas	N.H.
Moale, Elsie Weston	Md.	Monahan, Matthew Roy	D.C.
A.B. 1939, Goucher College		Monasteraki, Edward	Va.
Moan, Jeanne Corkhill	Pa.	Monchlovich, Mike	
A.B. 1945, Seton Hill College		B.S. 1947, The George Washington University	Ill.
A.M. 1949, The George Washington University		Mondlock, Marguerite M.	Mich.
Modance, Walter Aaron	N.Y.	Mondschein, Earl Jay	India
B.S. 1938, College of the City of New York		Mongia, Jagjit Singh	
Modlin, Albert Jay	D.C.	A.B. 1948, Government College, Lahore, India	D.C.
B.S. 1948, The George Washington University		Monie, Don John	Pa.
Modlin, Philip Hodgins	N.C.	Monier, John Baptiste	
A.B. 1947, High Point College		B.S. 1941, University of Pittsburgh	N.J.
Moe, Albert Ferdinand	Calif.	Monisera, Frank Daniel	D.C.
B.S. 1928, University of California		Monk, Charles Albert	Iad.
Moe, Alfred Brox	Va.	Monk, Gordon Vance	Iowa
A.B. 1947, The George Washington University		Monlrx, Andrew W.	
Moe, Donald Jacques	Minn.	D.V.M. 1942, M.S. 1947, Iowa State College of Agriculture and Mechanic Arts	Pa.
B.S. 1941, United States Naval Academy		Monn, John Israel	
Moe, Lucas Harlan, Jr.	Pa.	B.S. 1941, Pennsylvania State Teachers College, Shippensburg	Va.
Moe, Stanley Kermit	Calif.	Monroe, Charles Stephen	
Moebus, Charles J.	Ohio	B.S. 1930, Virginia Polytechnic Institute	Va.
Moehring, J. Truitt	D.C.	Monroe, Evelyn J.	
Moeller, Marian	N.C.	B.S. 1930, University of Virginia	Mich.
Moeller, Ruth	Mo.	Monroe, John Anthony	
Moerman, Constance L.	Va.	B.S. 1945, Emma Institute	Va.
A.B. 1948, The George Washington University		Monroe, Mary Dielsch	Va.
Moffatt, Jean H.	D.C.	Monroe, Mildred Jeanette Searle	
A.B. 1922, Erskine College		A.B. 1929, A.M. 1931, The George Washington University	Ala.
A.M. 1941, Columbia University		Monroe, Samuel Ray, Jr.	
Moffatt, Samuel John	D.C.		

Monsees, Edna Kury	D.C.	Moore, Jack Martin	Md.
B.S. 1930, University of Missouri		A.B. 1949, The George Washington	
Monshiemer, Louis Bertram	N.Y.	University	
Monson, Margaret Joanne	Md.	Moore, James Benjamin	S.C.
Montague, Helen Boward	Va.	B.S. in C.E. 1939, Clemson Agri-	
Montague, William Eugene	D.C.	cultural College	
Montalbano, Michael Salvatore	N.Y.	Moore, James Edward	D.C.
A.B. 1948, The George Washington		Moore, Jesse Lee	D.C.
University		Moore, Jesse Myatt	Ark.
Monte, Frank James	D.C.	Moore, John Rutledge	N.M.
Montecalvo, Sam	Ill.	Moore, Lee Randolph	La.
A.B. 1941, University of Illinois		Moore, Lussadel	Ga.
Monteth, Alice Jean	Va.	Moore, Mable E.	D.C.
Montgomery, Joe Moore	Ala.	Moore, Marion Pauline	Ariz.
Montgomery, Peyton	Md.	A.B. 1942, University of Arizona	
B.S. 1935, Davidson College		Moore, Mary Jane	D.C.
Montgomery, Rayner Augustine, Jr.	D.C.	Moore, Patricia Ann	D.C.
Montgomery, Richard Clemens	D.C.	Moore, Patricia Catherine	Va.
Montgomery, Robert Hayes	D.C.	Moore, Patricia Mary	Va.
Montomas, Stanley	D.C.	Moore, Richard Thomas	D.C.
B.S. 1942, United States Naval		Moore, S. Reid	D.C.
Academy		Moore, Samuel Varick	D.C.
Monyak, John George	Pa.	B.S. 1942, University of Maryland	
B.S. 1949, Geneva College		Moore, Shirley Throckmorton	D.C.
Moody, Dwight Lyman	Va.	Moore, Stella Davenport	Va.
B.S. 1935, United States Naval		Moore, Stewart Fawcett	W.Va.
Academy		A.B. 1943, Bethany College, W. Va.	
Moody, Harold Abram, Jr.	N.Y.	B.S. 1948, Carnegie Institute of	
Moody, Horace Ray	D.C.	Technology	
Moody, Martha Ada	N.C.	Moore, Thomas Carlisle, Jr.	Ga.
B.S. 1942, Western Carolina Teachers		B.S. 1946, Georgia Institute of	
College		Technology	
Moody, Nellie High	Va.	Moore, Thomas Wesley	D.C.
Moody, William Augustus	Tenn.	Moore, Virginia Wesley	N.M.
Mooney, William Ray	Ill.	Moore, Waldo Hawthorne	Va.
A.B. 1949, James Millikin University		Moore, Ward John	Md.
Moon, Thomas Jefferson, Jr.	Ala.	Moore, Willard Edward	W.Va.
Mooney, James Elliott	Fla.	A.B. 1949, West Virginia University	
A.B. 1949, University of Florida		Moore, William Francis	D.C.
Mooney, Mark Wendel	Md.	Moorefield, Carlton Swain	N.C.
Mooney, Patricia Ann	Tex.	A.B. 1940, Lenoir-Rhyne College	
A.B. 1941, College of Mines and		Moorefield, Courtney Marshall	N.Y.
Metallurgy, El Paso		B.S. in M.E. 1949, University of	
A.M. 1944, East Texas State Teachers		Illinois	
College		Mooreheld, Herbert Hughes	Md.
Ph.D. 1946, Cornell University	Conn.	Mopper, Kehath Samuel	Ga.
Mooney, Robert James		Moraghan, John Edward	Va.
B.E. 1942, Yale University	Ga.	Morales, Betty Jane	Md.
Moore, Alvin, Jr.	Tenn.	Morales, Donald Chauncey	Md.
Moore, Arthur Daniel		Morales-Yordan, Jorge	D.C.
B.S. 1949, East Tennessee State		A.B. 1948, University of Puerto Rico	
College		Moran, Andrew John	Pa.
Moore, Betty Louise	D.C.	Moran, Charles Vincent	Va.
Moore, Boyd Gaerry	D.C.	A.B. 1949, The George Washington	
Moore, Charles Clifton, Jr.	D.C.	University	
Moore, Charles Frew	Md.	Moran, Leslie Paulgett	Md.
Moore, Clifton Robert	D.C.	A.B. 1946, Hood College	
B.P.E. 1924, Springfield College		B.S. in L.S. 1947, Drexel Institute	
Moore, Donald Francis	Mass.	of Technology	
Moore, Donald Wheeler	Va.	Moran, Leon James	Conn.
Moore, Donnie McCoy, Jr.	Md.	LI B. 1949, The George Washington	
Moore, Douglas Hamilton, Jr.	Va.	University	
Moore, Elizabeth Grace	N.M.	Moran, Leroy	Va.
A.B. 1947, University of New Mexico		A.B. 1949, Lynchburg College	
Moore, Elmer Lee	Md.	Moran, Peter Joseph	N.J.
Moore, Ethel Lee	Md.	Moran, Robert Emmet	Md.
Moore, Eugene Minton	Ala.	Moran, Terrance Lamar	Md.
Moore, Frank Donald	Idaho	Mordas, George	N.J.
Moore, Franklin Benjamin	Mich.	Murehouse, Lucille Vivian	N.Y.
Moore, Henrietta S.	Ind.	Moreland, Chester Martin	Pa.
Moore, Henry Wadsworth, Jr.	D.C.		
B.S. 1942, University of Maryland			

Moreland, Helen Lucile	Iowa	Morris, Owen Hughes, Jr.	Va
B.S. 1940, Iowa State College of		Morris, Ralph Franklin	W.Va
Agriculture and Mechanic Arts		Morris, Robert Hart	D.C.
A.B. 1948, The George Washington		Morris, Ronald Eugene	Pa
University		Morris, Sara Roberta	D.C.
Moren, Clarence Gill	N.Y.		
Morgan, Alice Susan	D.C.	A.B. 1933, The George Washington	
B.S. 1938, University of Maryland		University	
A.M. 1946, The George Washington		A.M. 1938, Columbia University	Mass.
University		Morris, Thomas Patrick	
Morgan, Antonia Louise	Canada	Ph.B. 1941, Providence College	D.C.
Morgan, Billie	Va.	Morris, Una Rita	Va
B.S. 1936, Virginia State Teachers		Morrison, Alexander Henderson	
College, Farmville		A.B. 1939, Virginia Military Institute	Md.
Morgan, Cecil W.	Va.	Morrison, Carson Carson	
B.S. 1927, Springfield College		A.B. 1928, Pacific Union College	
Ed.M. 1942, Ph.D. 1944, University		M.S. 1942, University of Southern	
of Pittsburgh		California	Nebr.
Morgan, David Richard	Maine	Morrison, Claude Oliver	
Morgan, Don Earle	Ky.	B.S. 1932, University of Nebraska	Va
Morgan, Donald Ray	Pa.	Morrison, Eva Jean	N.Y.
Morgan, Earl James	Va.	Morrison, Howard Irwin	D.C.
Morgan, Edward Tull	S.C.	Morrison, James Robert	Va
Morgan, Emory Claude	Calif.	Morrison, Mary Margaret	Maine
B.S. 1948, University of Southern		Morrison, Philip Hapworth	
California		B.S. 1949, University of New Hamp-	
Morgan, Glenn Franklin, Jr.	D.C.	shire	D.C.
Morgan, James Donald	Md.	Morrison, Ralph Robert	D.C.
A.B. 1949, University of Maryland		Morrison, Robert Reed	Va
Morgan, John Edward	Maine	Morrison, Robert Turnbull, Jr.	
Morgan, John Hamilton	D.C.	A.B. 1932, Ohio Wesleyan University	
Morgan, John William	W.Va.	A.M. 1934, Ohio State University	Va.
Morgan, Robert Campbell	N.C.	Morrison, William Llewelyn	
Morgan, Robert Elonzo	Md.	B.S. 1939, United States Coast Guard	
Morgan, Robert Henry	Md.	Academy	Maine
Morgan, Robert Stong	Tenn.	Morrison, William Robert	D.C.
Morgan, Walter Lee, Jr.	Ala.	Morrissey, Raymond	Md.
Morgan, William Mitchell	D.C.	Morrow, Christopher Mollen	Pa
Morsestein, Harvey Norman	Md.	Morrow, Mary Lou	D.C.
B.S. 1949, University of Maryland		Morse, Marjorie Lee	Pa
Morget, Charles Oscar	Md.	Morter, Norman Alvey	D.C.
Morget, Clarence Abner	Md.	Mortimer, Doris Haganeere	
Moriarty, Sarah Catherine	W.Va.	B.S. 1939, Ohio State University	Pa
Moritz, Andrew Bruce	S.D.	Morton, Frank Reginald	
A.B. 1942, University of South Dakota		A.B. 1938, Thiel College	
Morledge, Charles Calvin	D.C.	B.D. 1942, Lutheran Theological	
Morley, Christina Bird	D.C.	Seminary, Gettysburg	D.C.
Morley, John Royal	N.J.	Morton, George Richard	ME
A.B. 1949, Marietta College		Mosby, June Clarice	Pa
Morley, Richard Gordon	Va.	Moseley, Francis Wilson	Va
Morlock, Harry Kenneth	D.C.	Moseley, Theresa Brill	Va
Morone, Augustus James	Va.	Moser, Ben	Pa
Morone, Francis Goodwin	Va.	Moser, Martin William	
B.S. 1925, University of Maine		A.B., A.M. 1948, University of	
Moroz, Walter Stanley	Md.	Pittsburgh	D.C.
Morrell, Francis Arthur	N.Y.	Moser, Ruth	Pa
Morrell, Leo Gregory	Pa.	Moshier, Annette M.	Va
B.S. 1947, Georgetown University		Moskey, Thomas Andrew	
Morrell, Roger Merrit	Md.	B.S. 1916, University of Maryland	D.C.
Morris, Braska Henry	Ark.	Moskowitz, Margaret M.	D.C.
Morris, Clyde Linwood	Va.	Moskowitz, Milton Sam	D.C.
Morris, Douglas Cockerille	Va.	Mosley, Laura Morehead	Pa
Morris, Florence	Minn.	Mosley, Richard Harry	Miss.
Morris, Jack Curtis	Ill.	Morman, Kenneth Freeman	Miss.
A.B. 1949, Columbia University		Moss, Robert Cramton	N.Y.
Morris, James Peter	Conn.	Moss, Sidney J.	
A.B. 1940, The George Washington		A.B. 1948, The George Washington	
University		University	N.C.
Morris, James Philip	N.C.	Mosteller, Bertha Alene	Md.
Morris, John Michael	D.C.	Motraw, Ralph Joseph	
Morris, Leon M.	D.C.	A.B. 1911, Williams College	
A.M. 1930, University of Kentucky		A.M. 1935, Brown University	Mich.
Morris, Lewis Dawson	Va.	Mott, Howard	Va
Morris, Marian Miles	Ky.	Mott, Mary Louise Tully	

Mott, Richard Henry, Jr.	D.C.	Mullinnix, Allen Prather	Ind
A.B. 1947, The George Washington University		B.S. 1912, United States Naval Academy	
Motyka, Elizabeth Lucille	Mass.	M.S. 1926, Yale University	Va.
Motz, Ruth Louella	D.C.	Mullins, Jessie Edith	
B.S. 1918, Ohio State University		A.B. 1929, The George Washington University	
Mowat, John Charles	Mont.	Mullins, Walter Chesterfield	Ky.
Mowl, George Edward, Jr.	D.C.	Mullins, William Stanley	Tex.
Mouthright, Henry Kenneth	Va.	B.J., A.B. 1948, University of Texas	D.C.
A.B. 1934, Pennsylvania State College		Mumford, Alura Anne	D.C.
Moulton, Arthur Bertram	Va.	Mumson, Louis Pat	
B.S. 1943, University of Maine		A.B. 1943, The George Washington University	
Moulton, Maxwell Collin	Md.	Mund, Margaret Eileen	D.C.
Moutain, Robert Emmett	Minn.	Murder, Anne	D.C.
Mouton, Raymond	D.C.	Mundy, John Price	Va.
Mozar, Roger James	Md.	A.B. 1940, Bridgewater College	
Mozz, Rupert Francis	D.C.	A.M. 1948, University of Virginia	
Moumine, Henry Lee	D.C.	Mundy, John Leo	Pa.
Mouraine, Lucy Lee	Md.	A.B. 1948, Lafayette College	
Mousley, Joseph Charles	Iowa	Munckyo, Asa	D.C.
Mossavochi, Percydown	Pa.	Munger, Lorraine Junette	Va.
Mowers, Robert Dean	Pa.	A.B. 1947, The George Washington University	
Mual, Dorothy Lucille	Ill.	Municy, Eugene Joseph	Pa.
Mowrey, Morris Carl	D.C.	Munn, John Ivan	Pa.
Mowry, Boardman Shaw	N.J.	B.S. 1948, Pennsylvania State Teachers College, Indiana	
B.S. 1947, Purdue University		Munias, Constance Louise	Md.
Moy, Edwin	Va.	Munroe, Alfred A.	Kans.
Moyer, Robert Daniel	D.C.	A.B. 1946, Municipal University of Wichita	
Moverman, Ruth Jean	D.C.	A.M. 1947, Syracuse University	
Mowers, Henry Horace	D.C.	Munroe, Marianne	Va.
Moxian, David John	Pa.	Munro, Catherine Chenoweth	Md.
Mozingo, Frederick Strawn	D.C.	Munro, Sanford Sterling	Wash.
Mozier, Ethel	Ga.	Munson, Madlene Marie	Iowa
Muratore, Anthony Thomas	Pa.	Munson, Thomas Richard	Va.
Muehbach, Abraham Hershel	D.C.	Muster, Emil, Jr.	D.C.
Muehlhause, William	D.C.	Munves, William	Va.
Mueller, Bernard Clarence	Pa.	A.B. 1932, College of the City of New York	
Mueller, Mary Ellen	Va.	J.D. 1936, New York University	
Mueller, Peter Klaus	D.C.	Murabito, Frank Joseph	N.Y.
Muench, Peter H.	Calif.	Murano, Raymond Patricio	Va.
B.S. 1949, University of Southern California		Murdoch, Ben Joseph	Va.
Munonen, Oliver Adolph	Minn.	Murdoch, Linda Lee	D.C.
Muir, Donald Belden	D.C.	Murdoch, Robert Barnard	D.C.
Murhead, William, Jr.	Pa.	Murmane, John Francis	D.C.
B.F. 1942, Calcutta University, India		Murphy, Elton Ira, Jr.	Tenn.
Mulderig, Viola	N.Y.	Murphy, Randolph Clay II	Va.
Muldown, Charles P.	D.C.	Murphy, Barbara Fuller	D.C.
Mulford, Rindolph Mustian	N.J.	A.B. 1949, The George Washington University	
Mulhall, Francis Joseph, Jr.	D.C.	Murphy, Barbara Marie	D.C.
Mulhearn, Rupert Albert	R.I.	A.B. 1948, The George Washington University	
Mulkey, Thomas Charles	D.C.	Murphy, Claire Mary	Md.
Mull, John Clifford	N.C.	Murphy, Donald Leon	Ark.
Mulliskey, James Patrick	Ill.	Murphy, Eleanor Marguerite	D.C.
Mullen, Clarence Robert	Ohio	Murphy, Eugene Martin	Mass.
Mullen, John Abercrombie	Mass.	B.S. 1949, Georgetown University	
Mullen, Lyle Ray	D.C.	Murphy, Frank Joseph	D.C.
Mullen, Patricia Anne	D.C.	Murphy, Glenn William	D.C.
Muller, Eva Margrethe	D.C.	Murphy, Harriet McAndrew	D.C.
Muller, Raymond Carl	Norway	B.S. 1948, Wilson Teachers College	
B.S. 1949, University of Maryland		Murphy, Harry Lee	Pa.
Mulligan, Barry Wayne	D.C.	B.S. 1949, Grove City College	
B.S. 1949, Georgetown University		Murphy, James Palmer	Tex.
Mullin, Eugene Francis, Jr.	D.C.	Murphy, Joan Ann	D.C.
A.B. 1945, Brown University		Murphy, John Ancona	D.C.
Mullin, Helen Marie	D.C.	B.S. 1949, Georgetown University	
Mullineaux, O Charles	Md.	Murphy, John Jay	Nev.
Mulling, Jack	Ga.		
A.B. 1947, The George Washington University			

Murphy, John Joseph, Jr. B.S. 1943, University of Maryland	D.C.	Myers, Richard Ira Myers, Robert Arthur B.S. 1935, College of William and Mary	D.C.
Murphy, Joseph Alexander A.B. 1948, The George Washington University	D.C.	Myers, Sara Marie A.B. 1948, University of Southern California	N.J.
Murphy, Joseph Lawrence Murphy, Joseph Patrick A.B. 1949, The George Washington University	Va. Va.	Myers, Saul Meredith Myers, Thad Prentiss Myers, Thomas Ellsworth Myerson, Jacob Myer A.B. 1940, The George Washington University	D.C. Pa. Va. D.C.
Murphy, Lawrence Marsidles Murphy, Margaret Murphy, Patricia Ann Murphy, Richard Ernest A.B. 1941, St. Lawrence University	D.C. Pa. D.C.	Myette, Thomas Waldo Mynsberge, Maurics Myres, Charles Ernest A.B. 1942, Rice Institute	D.C. Ind. Tex.
Murphy, Robert Bernard Murphy, Robert P. A.B. 1948, Ripon College	D.C. Wis.	Myrianthopoulos, Ninos Cleovourou Myrick, Donald Marshall Myrick, Elizabeth Land Myrick, Joe H.	D.C. N.Y. Va. Tex.
Murphy, Thomas Boland Murphy, Thomas Harry Murphy, Thomas Joseph B.S. 1946, Franklin and Marshall College	Pa. Ind. D.C.		
Murphy, William Clark Murray, Ann Irene Murray, Charles Ambrose Murray, Edward Patrick Murray, Helen Dorothy A.B. 1944, University of Massachusetts	Va. Md. Mass. D.C. Mass.	Nacht, Frank Nadeau, Frances N. Nadel, Sidney Naecker, Priscilla Margaret Naeher, Willis Earl Nehle, Henry Emil Nesle, John Jacob Nugler, Norbert Nuge, Alex Paul Nuge, Louis James Nahan, Joseph Francis Nahas, George Frederick Nalin, Doris A.B. 1949, The George Washington University	N D.C. Tex. D.C. D.C. Pa. Md. Pa. N.Y. Pa. Mich. R.I. Conn. D.C.
Murray, Helen Holden A.B. 1926, Marietta College Murray, Herbert Henry B.M.E. 1948, The George Washington University	W. Va. Md.	Nahme, Leonard Lee Nadden, Eulaine B.S. 1942, University of Idaho	D.C. Va.
Murray, James Andrew, Jr. Murray, John Leo Murray, Kathleen Yvonne Murray, Malcolm Holden Murray, Richard Charles, Jr. Murrell, Evelyn Louise Murrin, Elizabeth Joan Murrin, Virginia Doubet Murnah, Everett Clark A.B. 1947, Harvard University	S.C. D.C. Md. W. Va. D.C. D.C. Pa. Pa. Ohio	Nail, Edwin Starkey Nauman, Norma Lee Nair, Roberta Young Nakashima, Sumio Nall, Berry Hudson, Jr. Nall, James Ramon Nalls, Barbara Gloria Nalls, John Willard, Jr. Namasnak, Stephen Nance, Ophir Carinal Jr. Naper, Robert Erwin Napolitano, Benjamin John Naquin, Frances Davis A.B. 1945, The George Washington University	D.C. D.C. D.C. Pa. Va. N.Y. Va. Ore. N.Y. Va.
Murtha, Edward A.B. 1949, Waynesburg College Muse, Claude Revere, Jr. A.B. 1949, The George Washington University	Pa. Va.	Naquin, Frances Lorraine Nargizian, Andrew Antranig Narizian, Edward Arsen Narrow, Wiley L.L.B. 1943, The George Washington University	Okla. D.C. D.C. Hawaii Md. D.C. Va. N.Y. Va. Ore. N.Y. Va.
Muse, Leonard Thomas Musselman, Ashby Milton B.S. 1947, University of Maryland Musselman, Homer Dewey Musser, Ella Bitner B.S. 1921, University of Washington	D.C. D.C. D.C. D.C. D.C.	Nash, Ruth Crandon Nash, Samuel Wellington Nassimbene, Raymond B.S. 1931, University of Denver	Va. N.Y. N.Y. D.C.
Mitchler, Thomas Edward, Jr. Muzzey, Susan Ann Myer, Lloyd Zuck Myers, Adda Mae B.S. in Ed. 1949, Pennsylvania State Teachers College, Bloomsburg	D.C. D.C. Pa. Pa.	Nathan, Bernard Naughton, Joseph Patrick Naugle, Glenn Lamar Nauman, Myles Lull	Va. N.Y. N.Y. D.C.
Myers, Billie Ray Myers, Dorothy Rose Myers, Eliza George A.B. 1929, College of William and Mary	Md. Va. Va.		R.I. Va. D.C.
Myers, George Albert, Jr. Myers, George Ford Myers, George Robert Myers, Harold Myers, Jacob Eugene Myers, John Dallas, Jr. Myers, Margaret Mary Myers, Merrill Thompson Myers, Mildred Isabel	Md. Md. Pa. Pa. D.C. Va. Md. D.C. D.C.		N.Y. D.C. Pa. D.C.

Navy, Muriel A.B. 1946, New York State Teachers College, Albany	N.Y.	Nelson, Robert George	D.C.
A.M. 1949, Columbia University		Nelson, Sally True	Va.
Nay, Harold Edgar	Md.	Nelson, Theodore Warren B.E.E. 1947, The George Washington University	Va.
Nayda, George Thomas	N.J.	Nelson, Walter Burns	D.C.
Naylor, Esther Olson	Md.	Nelson, Warren James	D.C.
Naylor, Gay Rogers, Jr.	Md.	B.S. 1948, University of Wisconsin	
Neach, Alphonse Alexander	Pa.	Nelson, William Halliday	W.Va.
Neasey, John Francis, Jr.	Mass.	Nemes, Michael Stephen	N.Y.
A.B. 1949, The George Washington University		Nernberg, Ralph Amos	Fla.
Neal, Paul	D.C.	Nershi, Michael Thomas	N.J.
Neal, Paul Frederick	D.C.	A.B. 1949, The George Washington University	
Neal, Ralph Bennett	Calif.	Nesbit, Mary Katherine	D.C.
Neal, Richard Gleason	D.C.	A.B. 1943, The George Washington University	
Neal, William Alfred	D.C.	Nesbitt, Betty Rae	Va.
Neale, Robert James	Calif.	Nesline, John Francis, Jr.	Va.
Nealon, James Dinneen	Va.	Ness, Juell R.	S.D.
Nearman, Jane Carol	D.C.	A.B. 1949, The George Washington University	
Nearman, Richard Edward	D.C.	Ness, Rudolph Walter	Ill.
Neary, John Matthew	Pa.	Nestor, Rosalie Eleanor	D.C.
Nee, William John	Va.	Nethercott, Mary Elizabeth	N.Y.
B.S. 1948, Marquette University		Nethercut, Robert Eugene	Ohio
Needham, Gerard Joseph	Pa.	A.B. 1949, College of Wooster	
Neeley, Arthur Call	Conn.	Nethken, Mary Helen	D.C.
B.S. 1948, Columbia University		A.B. 1940, A.M. 1952, West Virginia University	
Neely, James Curtis	Va.	Netterville, Victor Samuel	Ind.
Neenan, Elmer Bruno	Minn.	A.B. 1947, Indiana University	
Neff, Jacqueline Henriette	D.C.	Neuberger, Florence G. Perlmutter	Md.
A.B. 1948, The George Washington University		A.B. 1949, Hunter College	
Neff, John Lawrence	Va.	Noudorfer, Lawrence Sterling	N.Y.
B.S. 1941, United States Naval Academy		Neuenschwander, June Dare	W.Va.
Neff, June Elaine	Pa.	Neuhanser, Charles William	D.C.
A.B. 1946, College of William and Mary		Neuhouser, Joan Lawrence	D.C.
Neerine, Ellie	N.Y.	Neumann, Richard K.	Tex.
Neopoulos, Paul	D.C.	Neusch, Herman William	D.C.
Nerfort, Sol	D.C.	Neva, Aileen Ramona	Tex.
Neubhaus, Walter Draper	Va.	Neva, Edward	D.C.
Neil, Charles Verne	Minn.	Nevels, Elizabeth Marions	D.C.
Neil, Clyde G.	Pa.	B.S. 1942, Columbia University	
Neill, James McDow	N.M.	Nevasser, Albert Edward	Vt.
A.B. 1949, The George Washington University		Nevils, Florence Irene	N.Y.
Nelson, Arden Robert	Nebr.	Nevin, John Irving	Ga.
A.B. 1942, Nebraska Central College		New, Gregory Ryan	Md.
Nelson, Betty	N.Y.	Newcomb, Laurence C.	
Nelson, Dee Ramsey	Minn.	B.S. 1948, New York State Teachers College, Buffalo	
Nelson, Donald Sell	D.C.	A.M. 1947, The George Washington University	
Nelson, Dorothy Emily	D.C.	Newdick, William Adams	Maine
Nelson, Elsie T.	Conn.	A.B. 1949, University of Maine	
A.B. 1943, Connecticut College		Newell, Lewis	Md.
Nelson, Gordon Bruce	Tex.	Newey, John Percy	D.C.
Nelson, Hannah-Greta Elisabeth	D.C.	Newhard, Howard Daniel, Jr.	N.J.
Nelson, James Olmstead	Fla.	Newhouse, Leroy Clark	Md.
Nelson, Marjorie Bonnie	D.C.	Newkirk, Elwin Earl	Calif.
Nelson, Mary Jane	D.C.	A.B. 1948, University of Southern California	
A.B. 1948, The George Washington University		Newkirk, George Francis	Ill.
Nelson, Merle Ellsworth	D.C.	A.B. 1946, A.M. 1948, The George Washington University	
B.B.A. 1949, University of Minnesota		Newkirk, LeRoy	Va.
Nelson, Morton S.	N.Y.	Newkirk, Roy Francis	N.J.
Nelson, Paul Edward	Va.	Newland, Howard Theodore	Va.
B.S. 1945, Georgetown University		Newland, Mary Ellen	Iowa
Nelson, Raymond Arthur	N.Y.	Newland, Paul	Ill.
A.B. 1943, Tusculum College		A.B. 1948, The George Washington University	
Nelson, Raymond Martin	D.C.	Newland, Paul Arthur	Ind.
Nelson, Robert Eugene	Md.		
A.B. 1941, Cornell College			
A.M. 1942, Columbia University			

Newlin, Joseph Homan A.B. 1942, LL.B. 1948, The George Washington University	Pa.	Niemiec, Francis John A.B. 1944, Seton Hall College B.S. 1948, Georgetown University	N.J.
Newman, Basha	D.C.	Nigh, Evelyn Marie	W.Va.
Newman, Jack B.S. 1939, College of the City of New York	D.C.	Nikoloric, Suzanne Mills	D.C.
Newman, Jack	D.C.	Niles, Jack Stone	R.I.
Newman, Mary Ann	Va.	Niles, Philip Draper	N.Y.
Newman, Ruth Gallert A.B. 1947, Rutgers University	D.C.	Nimeroff, Bertram	Pa.
Newmyer, Armand B.S. in Ed. 1920, Northern State Teachers College	D.C.	Nimeroff, Isadore	Pa.
Newquist, Noel Clayton A.B. 1942, The George Washington University	S.D.	Nimeroff, Isadore B.S. 1948, The George Washington University	Va.
Newsome, George Marvin LL.B. 1949, The George Washington University	Kans.	Nimmo, Murray Franklin Bliss	D.C.
Newton, Alma Louise A.B. 1945, Wake Forest College	Va.	Ninnom, Barbara Joy	W.Va.
Newton, Donald Alan	Vt.	Niner, Rosemary	Va.
Newton, Frances Elizabeth	N.C.	Nisewander, Elton Lee	Hawaii
Newton, Gordon Quincy	D.C.	Nishi, James Akio	D.C.
Newton, James Robert	N.C.	Nishimura, George Kazuo	Id.
Newton, Katharine R. A.B. 1940, Thiel College	Va.	Niskanson, Sue Bowie	D.C.
Newton, Louis Knox	Md.	Nisson, George Wendell	N.Y.
Newton, Walter Lloyd B.S. 1942, A.M. 1948, The George Washington University	N.C.	Nix, Wayne Dale	Pa.
Ney, Milton Rosenfeld	Md.	Nizilock, Josephine J.	Pa.
Neyman, Elizabeth Sutherland	D.C.	Nobel, John Phelps	D.C.
Nezin, Etta Reva	China	Nobel, Louis N.	Pa.
Ng, Louis Henry	Pa.	Noble, Sheldon Allen	D.C.
Nicalo, Ruth Elizabeth	Ill.	Noble, William Over	Va.
Nicholas, William	Mich.	Noel, William Cedric B.S. 1942, Virginia Military Institute	D.C.
Nichols, John Oliver	D.C.	Nolan, James Walter Gerard	Mo.
Nichols, Lee	D.C.	Nolan, Joseph Deegan A.B. 1949, University of Missouri	N.J.
Nichols, Lloyd Barden	D.C.	Nolan, Paul Joseph B.S. 1949, Seton Hall College	N.Y.
Nichols, Louis Nicholas	D.C.	Nolan, Robert Marston	D.C.
Nichols, Merrill Howard	D.C.	Nolan, Sally Marie	Ga.
Nichols, Mildred Elizabeth	Iowa	Noland, Emmitt E., Jr. A.B. 1949, University of Georgia	D.C.
Nichols, Peggy Joan	D.C.	Nolan, Thelma Marie	Pa.
Nichols, Robert Edmund	D.C.	Noll, Carl Thomas	D.C.
Nichols, Ronald Alvin	N.M.	Nolte, Ann Elizabeth	D.C.
Nichols, Warren James A.B. 1949, The George Washington University	Md.	Nolte, Carl Robert, Jr. A.B. 1948, College of William and Mary	Tex.
Nichols, William Ashey	S.C.	Nolte, Deborah Marian	D.C.
Nichols, William DeWayne A.B. 1947, Grinnell College	Md.	Nolte, William Robert B.S. 1945, University of Illinois	Pa.
Nicholson, Richard Lee	Va.	Nonemaker, Charles Henry	Va.
Nickerson, George Willis	Okla.	Noonan, Carol Barbara	N.Y.
Nicoletus, Patricia Ann	W.Va.	Noonan, Edward James	N.J.
Nicolaissen, Gordon Albert	D.C.	Noonan, John Thomas	D.C.
Nicola, Vincenzo Antonio	N.Y.	Noonan, Virginia Maury	Calif.
Nicolasopoulos, Diana Georgia	D.C.	Noone, Anthony	France
Niden, David B.S. in Ed. 1938, Pennsylvania State Teachers College, Kutztown	D.C.	Norcross, Elizabeth	D.C.
Niebel, Gayle Elizabeth B.S. 1937, Lebanon Valley College	Va.	Norcross, Jean Leslie	N.C.
Niederstrasser, Robert Edward	Va.	Norden, Thomas Bernard	Mass.
Niefeld, Herbert	D.C.	Nordheim, Edna Fay	N.Y.
Nielsen, Harry Otto A.B. 1944, American University	D.C.	Nordholm, Eric Gregg	Minn.
Nielsen, Jean Kelly B.S. 1930, A.M. 1943, The George Washington University	Va.	Nordness, Gladys Lillian	Iowa
Nielsen, Jessie Patricia	N.Y.	Nordquist, Dean Anthony A.B. 1949, State University of Iowa	D.C.
Niemi, Viola Eleanor	Mich.	Noren, Morris Keith A.B. 1948, University of Oregon	D.C.
		Norfeet, Elaine Hobart	D.C.
		Norling, Sonja Eva	N.Y.
		Norman, Daniel Abraham	Me.
		Norman, George A.B. 1947, Western Maryland College	W.Va.
		Norman, Joan H. K.	Va.
		Norman, John T. B.S. 1940, Ohio State University	D.C.
		Norman, Richard Arthur	Va.
		Norman, William Bruce	

Normandeau, Keith Joseph	Minn.	Nuspliger, Helen Marie	N.Y.
Norment, Nancy Richards	D.C.	B.S. 1947, Notre Dame College	
Norrington, Frances Taylor	Md.	Nussbaum, George Leight	D.C.
Norris, George Todd	Va.	Nuth, Eleonore Julia	N.Y.
B.S. in Ed. 1934, Bowling Green		Nutman, Norma Stein	D.C.
State University		Nutter, Joseph William, Jr.	R.I.
Norris, Joseph Kieffer	D.C.	A.B. 1947, Yale University	
Norris, Lawrence Goeltrey	Ill.	Nuttman, Harold Franklin	Kans.
B.S. 1947, University of Illinois		Nyce, James Carroll	Md.
Norris, Willa	Nebr.	Nyce, Mary Brodhead	Pa.
B.S. 1934, University of Nebraska		Nyeard, Arthur H.	Va.
A.M. 1943, Columbia University		B.E. 1935, Wisconsin State Teachers	
North, Richard Parsons	N.Y.	College, Stevens Point	
North, Romona Ruth	D.C.	A.M. 1939, University of Chicago	
A.B. 1948, Catholic University of		Nyhagen, Donald Richard	D.C.
America		B.S. 1944, University of California	
North, Stanley Underwood	N.J.		
A.B. 1942, Colgate University		O	
Northam, Westcott Brownlee	Va.	Oakes, Edmund Ignatius	D.C.
Northover, Edward Ralph	D.C.	Oakes, Lynwood Taylor	N.C.
Northrup, Barbara Winifred	N.Y.	Oakes, Walter Foster, Jr.	Va.
A.B. 1947, Elmira College		Oakey, George D.	Hawai
Northup, Graham Theodore	D.C.	A.B. 1948, University of Hawaii	
Norton, Elizabeth Rosemary	Md.	Obal, Paul	Va.
Norton, Hugh Stanton	Nev.	Ober, Kenneth Harlan	Ark.
A.B. 1947, A.M. 1948, The George		Oberholzer, John William	Ind.
Washington University		A.B. 1942, Furman College	
Norton, Maurice Edwin, Jr.	D.C.	Obermier, Luth. Theresa	N.Y.
Norton, Miriam	Mass.	Obermier, John Nicholas	N.Y.
Norvell, Jeanne Gaddis	Wis.	Obratney, Andrew Anthony	D.C.
Norvell, Robert Joseph	Wis.	O'Boyle, Joan Agnes	N.Y.
B.S. 1947, University of Wisconsin		O'Brian, Edward Day	Iowa
Norwinski, Eugene E.	N.Y.	B.S. 1947, Iowa State University of	
Norwood, Herman, Jr.	D.C.	Agriculture and Mechanic Arts	
Norwood, Marian Bettie	Va.	O'Brian, Evelyn Kuntz	Iowa
A.B. 1947, Madison College, Va.		O'Brian, Paul William, Jr.	D.C.
Notstein, Charles Lewis	Okla.	A.B. 1948, University of North	
Nott, Joseph George	Va.	Carolina	
Nottingham, Wilbur Ivan	D.C.	O'Brien, Anthony Aloysius	D.C.
Notz, William Alan	D.C.	O'Brien, Barbara Ann	D.C.
B.S. 1944, Harvard University		A.B. 1948, University of Pennsylvania	
Novak, Frederick Michael	N.Y.	O'Brien, Francis James, Jr.	Conn.
A.B. 1949, Shepherd College		O'Brien, James Dennis	Iowa
Novakovich, Dan	Pa.	O'Brien, John Andrew	D.C.
Novakovich, Nada	Nev.	O'Brien, Joseph Gerald	D.C.
Novakovich, Naomi Goll	D.C.	O'Brien, Margaret Marion	Md.
B.S. in Ed. 1934, New York State		O'Brien, Marilyn Patricia	Mass.
Teachers College, Buffalo		O'Brien, Robert John	N.Y.
Novick, Irving	D.C.	O'Brien, Thomas	D.C.
Novikov, Yuz Vasiljevich	D.C.	A.B. 1946, The George Washington	
Novy, James Samuel	Va.	University	
Nowak, Edward V.	D.C.	O'Brien, William John	Mass.
Nowak, Francis Stahley	Va.	B.S. 1942, Tufts College	
Nowak, Leopoldina Antonie	Ill.	Ochipinti, Samuel Joseph	N.J.
A.B. 1947, The George Washington		O'Connell, Charles Carroll	Va.
University		B.S. 1948, Georgetown University	
Nowicki, Alfred Theodore	Pa.	O'Connell, Edward, Jr.	Ala.
Nowlin, Joe Franklin	Ark.	A.B. 1940, University of Michigan	
LL.B. 1949, University of Arkansas		O'Connell, John Joseph	Va.
Nubbe, Virgil George	Minn.	O'Connell, Joseph Michael	D.C.
A.B. 1942, The George Washington		O'Connell, Thomas Francis	Conn.
University		O'Connor, Adele Rae	D.C.
Nuhn, John Alfred	Md.	O'Connor, Charles Frederick	Va.
A.B. 1947, The George Washington		A.B. 1948, The George Washington	
University		University	
Nuhn, Richard Louis	Md.	M.B.A. 1940, University of	
Nutt, Fyllis Viola	Va.	Pennsylvania	
Nutten, Frances Louise	D.C.	O'Connor, Charles William	D.C.
A.B. 1948, Vassar College	D.C.	O'Connor, Denis Patrick	Va.
Nurco, David N.	N.Y.	O'Connor, Edward Francis	N.Y.
Nyholm, Bertram Spagat, Jr.	D.C.	O'Connor, James Joseph	Md.
B.S. 1945, University of Virginia			
Nurbaum, Jerome Lee	D.C.		

O'Connor, Joseph Michael	D.C.	Oishi, Kazumae Ichuiji	Calif.
O'Connor, Leo Joseph Keven	D.C.	Oishi, Masaichi	Hawaii
O'Connor, Richard Leo	Calif.	B.S. 1940, The George Washington University	
O'Connor, James Atlee	Va.	O'Keef, John Edward	Ill.
Oczyrko, John Stanley	Hawaii	O'Keefe, George Aloysius	Mass.
Oda, Robert Yasso	Va.	O'Keefe, James Edmund	D.C.
Odellson, Odie Wildur	Calif.	O'Keefe, John Joseph	D.C.
Odellstad, Elma Dagmar	Md.	A.B. 1948, University of Southern California	
O'Dea, Lawrence Aloysius	D.C.	O'Keefe, Mary Frances	Pa.
O'Dea, Thomas Emmett	Pa.	Okopinski, Charles Paul	Pa.
O'Dell, Frank Eugene	W Va.	Olafson, Nancy Kay	D.C.
O'Dell, Helen	D.C.	Olds, John Daniel	D.C.
O'd Neal, Mary Louise	D.C.	O'Leary, John Francis	Utah
O'Donnell, Anne Hedwig	D.C.	O'Leary, Rawlin Eugene	Mass.
B.S. 1947, Wilson Teachers College		Oleinik, John Richard	Pa.
O'Donnell, Catherine Marie	Pa.	Olezninski, Edward Joseph	Pa.
O'Donnell, Francis Joseph	N.I.	Olenik, Joseph Eugene	D.C.
O'Donnell, Horace Paul	D.C.	Olesen, Donald Gold-nes	D.C.
O'Donnell, John Grattan	D.C.	A.B. 1944, Swarthmore College	
O'Donnell, Joseph Michael	Va.	Olexa, Elmer Emery	Pa.
O'Donnell, Vincent Leo	Pa.	Olexy, Peter Thomas	Md.
O'Donoghue, Grace Mary	D.C.	B.S. 1950, Pennsylvania State College	
B.S. 1948, Wilson Teachers College		Oliff, Edward George	N.I.
O'Donoghue, William Henry	D.C.	Olin, Wilber C.	D.C.
B.S. 1950, Wilson Teachers College		Olinger, James Milumn, Jr.	Va.
Odya, Hugh Malcolm	Pa.	A.B. 1949, Emory and Henry College	Va.
A.B. 1947, Pennsylvania State College		Olive, Carlene Mae	D.C.
Oehlschlaeger, Virginia Louise	Vt.	Oliver, Abbie Hannah	D.C.
Orlein, Frances Adele	D.C.	Oliver, Emery Eugene, Jr.	Va.
Ofelt, George Richard	Va.	Oliver, Gertrude Chesley	D.C.
B.S. in E.E. 1927, University of Minnesota		Oliver, Lloyd Gilbert	Over.
Offenbacher, Hurley Francis	D.C.	Oliver, Phyllis Irene	Va.
Offenbacher, Thomas Ralph, Jr.	D.C.	Oliver, Richard Lewis	Va.
Offutt, Eleanor Rebecca	D.C.	Oliver, Wallace Bryan	Va.
O'Flaherty, Barbara Jean	Va.	Ollendorf, Donald	Va.
O'Flaherty, Daniel Fairfax	Va.	Ollice, John Hollowell	D.C.
O'Friel, Edward Waters	Pa.	Olmiest, Robert Francis	N.Y.
Ofiedal, Richard Halland	D.C.	Olmiestad, Normand Henry	D.C.
Ofiedal, Sverre John	D.C.	Olmiest, George Leavitt	Va.
A.B. 1942, Occidental College		Olmiest, Lester Emilen	D.C.
O'Gara, Norma Alice	Va.	Olmsky, Steve Anthony	Utah
O'Gara, Roger William	Mass.	Olsen, Benjamin Cowley	D.C.
A.B. 1948, The George Washington University		Olsen, George Capewell	D.C.
Ogburn, Mary Camelia	Va.	Olshaker, Gertrude Edith	
A.B. 1945, Sarah Lawrence College		B.S. 1944, Wilson Teachers College	D.C.
Ogburn, Walter Shore, Jr.	Md.	Olshaker, Irving Herman	D.C.
Ogle, James Van	Va.	Olshaker, Thelma A.	
Ogle, John Newman	Ind.	B.S. 1947, Wilson Teachers College	N.Y.
B.S. 1944, United States Naval Academy		Olshin, John Seymour	Va.
Oglethy, Herbert Wills	Tenn.	Olson, Charles Doswell	N.D.
Oglesby, Nicholas Ewing, Jr.	N.Y.	Olson, Darwin Leander	
B.S. in Ch. Eng. 1947, M.S. in Ch. Eng. 1947, Rensselaer Polytechnic Institute		B.S. 1941, North Dakota Agricultural College	D.C.
Ogletree, James Maurice	Ga.	Olson, Richard Lionel	
Ogrady, John Patrick	D.C.	A.B. 1949, The George Washington University	
Ogren, Ruth Madeline	N.C.	Olson, Robert Glenn	Iowa
O'Halloran, Anne Adelia	Kans.	Olsson, Charlene Elizabeth	N.Y.
O'Halloran, James Stewart	Va.	Olzewski, George John	Mass.
O'Hara, Royal Clair	Pa.	Olund, Betty Ann	Mass.
O'Hara, Edward Michael	Minn.	O'Malley, Daniel Damian	D.C.
O'Hara, Joseph Patrick	Minn.	O'Meara, William Raymond	D.C.
A.B. 1948, The George Washington University		Omohundro, Mary Lee	Md.
O'Hazza, Francis Edward	Pa.	O'Neal, James David	Mass.
A.B. 1940, Pennsylvania State College		O'Neal, James Ormston	N.Y.
Ohl, Robert Franklin	Va.	O'Neil, John Dennis	Mont.
Ohliger, Dorothy Louise	D.C.	O'Neil, Phyllis Patricia	Pa.
Ohman, Thor Axel	Va.	O'Neil, Ruth	
Oilschlager, Gerald Albert	D.C.	O'Neill, Edward Joseph	
		B.S. 1935, Villanova College	D.C.
		O'Neill, Peter James, Jr.	

O'Neill, Robert Daniel	D.C.	Osso, Anna Dolores	Pa.
Onge, Harry Alfred	Md.	Ostatnik, Stephen Frederick	N.J.
Onion, Janice Dunagan	Va.	A.B. 1949, Wittenberg College	
Onofrio, Pasquale Joseph	D.C.	Osten, Donald Walter	D.C.
Onstine, Burton Warner	Wash.	Osthoff, Hazel Jean	Kans.
Ontrak, John Joseph	Pa.	Ostreich, Ralph	D.C.
Opasowski, Walter Emil	Mass.	Ostrove, Bertram Ira	D.C.
Opp, William Russell	Okla.	A.B. 1947, The George Washington University	
Oppenheim, Edward Elliot	Va.	O'Sullivan, John Maurice	Mass.
A.B. 1941, University of Maine		Oswald, Elizabeth Janet	Va.
L.L.B. 1949, Georgetown University		B.S. 1937, University of Maryland	
Oppenheimer, Celia	D.C.	M.S. 1947, The George Washington University	
Oppert, Donald Eugene	D.C.	Oswald, Jean Louise	D.C.
Oram, Melvin	Pa.	A.B. 1948, The George Washington University	
B.S. 1949, University of Scranton		Otero, Carlos Enrique	D.C.
Orl, James Garesché	D.C.	Otero, Luis Raul	D.C.
O'Regan, William Vincent, Jr.	D.C.	O'Toole, Martin Stephen	Pa.
O'Reilly, Jacqueline Marie	D.C.	O'Toole, Stephen James	Va.
O'Reilly, Kathryn Louise	Conn.	B.S. 1949, Fordham University	
Orem, David Simpson	Md.	O'Toole, Ursula Elizabeth	Mich.
A.B. 1949, Oberlin College		Ott, Iva Murriel	D.C.
Orenden, Lucille Jane	D.C.	Ott, Jesse H.	Md.
Orenstein, Herbert	N.Y.	Ott, Katherine A.	Va.
Orenstein, Marilyn Claire	N.Y.	B.S. 1944, Western Reserve University	
Orleans, Beatrice S.	N.Y.	Otte, George Robert	Md.
A.B. 1949, Hunter College		Ottenstein, Victor H.	D.C.
M.S. 1941, Columbia University		B.S. 1948, University of Pennsylvania	
Orleans, Joan Lorelei	D.C.	Otterman, Harvey Boyd	Vt.
Orlitz, Hyman	D.C.	A.B. 1949, The George Washington University	
B.B.A. 1944, College of the City of New York		Otti, Charles Leo	Calif.
A.B. 1948, The George Washington University		Otto, Frederick Franklin	Md.
Orloff, Milton	D.C.	A.B. 1948, Shepherd College	
Orlove, Harold	Pa.	Otto, Ingolf Helm Liried	Md.
Orlovsky, Leo	N.J.	A.B. 1941, University of Cincinnati	
Ormond, William Berkeley	D.C.	Overcash, Frances Stewart	D.C.
Orndorff, Maud Vernon	Va.	Overman, Horace Wooten	Va.
B.S. in Ed. 1930, University of Virginia		Ovrom, Allan Alfred	Wis.
Ors, Susan	Md.	B.S. 1942, United States Naval Academy	
Orsch, John Jay	N.Y.	Owen, George Morgan	D.C.
A.B. 1949, Brooklyn College		Owen, Greta Jane	Va.
Ort, Donald Tilford	Ariz.	Owen, Percy, Jr.	Mich.
A.B. 1948, University of Arizona		A.B. 1948, Princeton University	
Ort, Gus Wayne	D.C.	Owen, Richard Roberts	Ind.
A.B. 1929, Mississippi College		B.S. 1949, The George Washington University	
Ort, William Baxter	Va.	Owen, William Craft	Va.
Ortison, Virginia Davenport	Wash.	Owens, Clarence Julian	Md.
A.B. 1948, Whitman College		Owens, Helen Boyle	Va.
Ortison, William Foster	D.C.	B.S. 1948, Pennsylvania State Teachers College, Bloomsburg	
Omer, Janet McBryde	Calif.	Owens, Jack	W Va.
Ortiz-Irizarry, Francisco G.	D.C.	Owens, John Patrick	D.C.
Ortolani, Frank Richard	Pa.	A.B. 1949, American University	
B.S. 1944, B.S. in Ch.E. 1948, Pennsylvania State College		Owens, Marcus Orlando	Tex.
Osann, Robert	Va.	Owens, Muriel Bernice	Wash.
B.Ch.E. 1943, Rensselaer Polytechnic Institute		Owens, Wilbur Leroy	D.C.
Osborn, Austin Godfrey	N.J.	Owings, Ruth	S.C.
B.S. 1950, University of Notre Dame		B.Mus. 1948, Furman University	
Osborn, Ilah Traver	Va.	Oxendine, Heaverd Dobber	N.C.
B.S. 1929, Oregon State College		Oxfield, Jack	Pa.
Osborn, Robert Ambrose, Jr.	Va.	Oxholm, A. W.	D.C.
Osborne, James William	Ala.	A.B. 1949, The George Washington University	
Osborne, Joseph C.	D.C.	Oyama, Jiro	D.C.
Osech, John Marcus	Kans.	B.S. 1949, Northwestern University	
B.S. 1936, United States Naval Academy		Oyster, David Fairfax	Va.
Osheroff, Milton	N.Y.	Oza, Manyukumar Jayantilal	India
B.S. 1939, College of the City of New York		A.M. 1948, Columbia University	
Osmon, Emily Harford	Fla.	Ozburn, Ernest Eugene	Ga.
Osmon, Richard Barr	Fla.		

P		
Pace, Daniel Anthony	N.Y.	
Pace, Moody Anderson	D.C.	
Pace, Stephen, Jr.	Ga.	
B.S. 1945, United States Military Academy		
Pacheco, Ricardo	Colombia	
S.J.D. 1944, Dr. of Econ. Science 1945, University of Javeriana, Colombia		
Packard, Daniel Abbott	D.C.	
A.B. 1949, Alabama State Teachers College, Jacksonville		
Packard, Ralph John	Va.	
Packel, Claire Marion	D.C.	
Packer, Ellis Reed	D.C.	
Paul, Iris Mildred Bishop	D.C.	
Paul, Thomas Randolph, Jr.	D.C.	
Paulberg, Jerome Frederick	Mo.	
Paulbury, Harry Rimes	Maine	
Paulest, Glenn Ernest	Fla.	
A.B. 1949, Duke University		
Paddha, George Mario	D.C.	
Pagan, Katharine	D.C.	
B.S. 1948, Wilson Teachers College		
Pagano, Anthony Roland	N.Y.	
Paine, Aileen Coolidge	Md.	
Paine, Helen Bell	D.C.	
A.B. 1927, LL.B. 1948, The George Washington University		
Page, Michael William	Pa.	
A.B. 1949, Yale University		
Page, Ryan Aleuder	Va.	
A.B. 1948, Wofford College		
Pagter, Elizabeth Eugenia	D.C.	
A.B. 1945, The George Washington University		
Parkowsky, Herman Mayer	Vt.	
A.B. 1949, University of Vermont		
Parlas, Themis Constantine	Mo.	
B.S. in Ind. Eng. 1948, Washington University		
Paine, William Howard	Calif.	
Painter, Merton Elizabeth Moothhead	Va.	
A.B. 1947, Florida State University		
Painter, Parker	Va.	
B.S. in E.E. 1940, Massachusetts Institute of Technology		
Paisley, Yvonne Carole	D.C.	
Pakis, Gloria Alexander	D.C.	
Palacios, Jose Antonio	Guatemala	
Palau, Manuel	Puerto Rico	
Palczewski, Henry Walter	N.J.	
Palczewski, Stanley Francis	D.C.	
Palenologos, Peter Harry	Md.	
Pallansch, Elizabeth Ann	D.C.	
Pallansch, Margaret Mary	D.C.	
Palmasani, Daniel Robert	D.C.	
Palmer, Arthur Andrew	Va.	
B.S. 1945, University of Maryland		
Palmer, James Albert	Wash.	
Palmer, James Marion	La.	
B.S. 1948, United States Naval Academy		
Palmer, John Gilbert	Md.	
Palmer, Richard Roy	W Va.	
Palmer, Robert Edward	Calif.	
Palmer, Thomas Alfred	Va.	
Palmer, William Colton	Md.	
A.B. 1948, The George Washington University		
Palmes, Douglas Edward	Va.	
Palmes, Lowell Richard		
LL.B. 1940, The George Washington University		
Palmieri, Alfred Frederick	N.Y.	
Palta, Hardev Singh	India	
A.B. 1947, University of Punjab		
Palumbo, Pasquale	Conn.	
M.E. 1944, Tufts College		
Panarakos, Charles Michael	Mass.	
Panagos, Peter Anthony	D.C.	
Panasewich, Walter	D.C.	
Pancost, Edwin Caleb	D.C.	
A.B. 1949, Maryville College		
Pancost, Frances Billings	D.C.	
Pandey, Nicholas Anthony	Mass.	
B.S. in Ch. Eng., 1947, Northeastern University		
Panettieri, Robert	N.Y.	
Pang, Hattie Cloy Hin	Hawaii	
Pang, Margaret Nyuk Fung	D.C.	
Pansbom, Eleanor Frances	D.C.	
A.B. 1937, Butler University		
Panzizza, Louis Robert	Va.	
Pannill, William Elason	D.C.	
Panos, Marie	D.C.	
Pantelias, John	N.Y.	
Pantol, Clare Winifred	Star	
Panyarajan, Prasad	Espr	
Papamichael, Michael Damianos	Va.	
Papay, Agnes Foley	Calif.	
Papavasani, Baby May	Conn.	
Papazoglou, Mary	N.Y.	
Papa, Robert Bruce	W Va.	
Pappas, Angelina J.		
A.B. 1947, Salem College, W. Va.		
Pappas, James John	W Va.	
Pappas, James Sophocles	Ter	
Pappas, Leo Basil	N.Y.	
A.B. 1943, High Point College		
Pappas, Stavros Steve	D.C.	
Papare, Bernard	Md.	
Paradise, Noel Edwin	D.C.	
A.B. 1948, University of Maryland		
Pardoe, Prescott Harmon	Pa.	
Parleman, Samuel Theodore	Ill.	
Parvelli, Paula Alexandra		
Ph.B. 1948, University of Chicago		
Parham, Robert Russell	Tex.	
B.B.A. 1949, University of Texas		
Park, Barbara Kay	Md.	
A.B. 1950, Columbia University		
Parker, Cecilia McCallum	D.C.	
Parker, Charles Hanke	D.C.	
B.S. 1942, Worcester Polytechnic Institute		
Parker, David Eric, Jr.	Ter	
Parker, Emily Davis	D.C.	
Parker, George Alton	Va.	
LL.B. 1939, The George Washington University		
Parker, Harold Curtis	D.C.	
Parker, Harry Hughes	Mass.	
Parker, James Brandon	Va.	
Parker, James Coy	N.C.	
Parker, James Franklin	D.C.	
Parker, James Frederick	D.C.	
B.S. in A.E. 1946, M.S. in A.E. 1946, Georgia Institute of Technology		
Parker, James Lewis	Pa.	
Parker, Jane Montgomery	D.C.	
Parker, Jane Timmons	D.C.	
Parker, Janice Carolyn	D.C.	
Parker, John Elliott	D.C.	

Parker, Louise Buell	N.Y.	Pate, Fairy Nell	D.C.
A.B. in Ed. 1947, New York State Teachers College, Potsdam		Patla, Andrew Richard	D.C.
A.M. 1949, The George Washington University		B.B.A. 1947, Penn. College	
Parker, Muriel Mary		Patten, Bernard Leonard	D.C.
Parker, O. B.	D.C.	Patrick, James Clarence	Va.
Parker, Rachel Tims	Md.	Pattavias, Constantine Chris	III.
Parker, Ralph Woodford	Ark.	Patt, Andrew Jeremiah	Wash.
A.B. 1939, Georgetown College	Md.	Patten, Stanley Fletcher, Jr.	D.C.
Parker, Richard Dale	Md.	B.S. 1949, The George Washington University	
Parker, Richard Ferman	D.C.	Patterson, Frances Tellefson	D.C.
Parker, Ross Calvin, Jr.	Fla.	Patterson, Gayle Devon	Md.
Parker, R. Elmo	W. Va.	Patterson, Gordon Alexander	D.C.
Parker, Thomas	D.C.	B.S. 1919, United States Naval Academy	
Parker, Thomas Henry	D.C.	Patterson, Jane Pauline	D.C.
Parker, Victor Harwell	Miss.	A.B. 1929, University of Kentucky	
A.B. 1941, Southwestern Louisiana Institute		Ed.M. 1941, University of Pittsburgh	
A.M. 1949, The George Washington University		Patterson, John Edward	Tenn.
Parkinson, Joyce Valerie	D.C.	Patterson, Joseph William	Iowa
Parkinson, Kenneth Wells	Md.	Patterson, Phyllis Arnett	N.J.
Parkinson, Richard Wells	Md.	Patterson, Ruby Savannah	N.C.
Parkinson, Robert Leslie	Ind.	Patterson, William Amos	D.C.
Parkinson, Roger West	Md.	Patterson, William Strong	D.C.
Parks, Albert Benjamin	D.C.	A.B. 1940, Erskine College	
A.B. 1942, The George Washington University		Pattillo, Andrew Gramling, Jr.	Fla.
Parks, James Theodore	Okla.	B.S. 1949, University of Florida	
Parks, Kendrick Wellman	Va.	Patton, Arthur Gordon	Va.
Parman, Nora Jean	Ohio	A.B. 1946, Yale University	
Parmenter, Ralph Owen	D.C.	Patton, Calvin Eugene	Md.
Parmenter, Margaret Anne	Minn.	Patton, John Strohm	Calif.
Parojinog, Simplicio Guyno, Jr.	Va.	B.S. 1941, University of Southern California	
Parish, James Shewood	Va.	Patton, Louis Edward	Md.
Parish, John Fomdexter	Va.	Patton, Raleigh Scott	Tenn.
Parish, Matthew Denwood	Va.	A.B. 1948, University of Chattanooga	
A.B. 1944, University of Virginia		Patte, Clarence Ralph, Jr.	Va.
Parrott, John Aubrey	Va.	B.S. in E.E. 1940, University of Tennessee	
Parry, Eleanor Elizabeth	D.C.	Paul, Albert Franklin III	Md.
A.B. 1941, Taylor University		Paul, Alvin Wilson	N.Y.
Parry, James Davidson	D.C.	Paul, Anita Florence	Mass.
Parry, Muriel Hope	N.Y.	Paul, Beth Koenig	Va.
A.B. 1946, University of Illinois		Paul, Carl Frederick, Jr.	N.Y.
Parrell, David Elwood	Md.	A.B. 1934, University of Rochester	
Parsons, Francis Alan	Md.	LL.B. 1935, Harvard University	
Parsons, Mary Perus	D.C.	Paul, Charles Bennett	D.C.
Parson, Franklin Ambrose	Va.	A.B. 1949, The George Washington University	
Partridge, Frances Jane	D.C.	Paul, LeRoy Spencer	D.C.
A.B. 1931, University of Illinois		Paullette, Edward Wilkes	Va.
A.M. 1939, University of Chicago		A.B. 1933, Hampden-Sydney College	
Pasbach, Lawrence R.	Mich.	A.M. 1943, University of Maryland	
Paschal, Buford Haran	Ala.	Paulsch, Eugene Bernard	Pa.
Paschuti, Edward Angelo	N.Y.	A.B. 1949, The George Washington University	
Pasco, Nicholas Daniel	Mass.	Paul, Alton Morton	R.I.
Pash, Edgar Constantine Boris	Va.	Paulson, Wilbur Harper	D.C.
Pash, Oliver Henry	Va.	Paulson, David	D.C.
Paskoki, Joseph John	N.J.	Paulson, Norman Clarence	S.D.
Pasquale, Matthew Richard	Pa.	Paustian, Cornelia Munz	D.C.
Pasa, Isabelle Louise	Mich.	B.S. 1929, A.M. 1930, Columbia University	
Pasaro, Anthony Noel	Md.	Ph.D. 1943, University of Missouri	
Pasternak, Robert	N.Y.	Pavia, Joaquin, Antonio	N.Y.
A.B. 1938, University of Wisconsin		Pavich, Milan O.	Pa.
Pasternak, Stephen	W. Va.	B.S. in E.E. 1948, University of Pittsburgh	
Paste, Peter John	Mass.	Pavia, William W.	D.C.
Paston, Greta Mina	N.Y.	Pavlat, Robert Kendall	Md.
Pastor, Sylvia I.	Ohio	A.B. 1949, The George Washington University	
Pastoriza, Ralph Babcock	N.Y.	Pavlu, Lawrence Kenneth	N.J.
B.S. 1944, California Institute of Technology			
Patch, Robert John	D.C.		
B.S. 1948, University of Michigan			

Pawley, Edward Porcher	N.Y.	Peeplea, Shirley Roberta	D.C.
Payne, Bettie Louise	Tex.	Peet, William Charles	Va.
A.B. 1940, Texas Technological College		Peifer, William Houston	Pa.
Payne, Bruce McCollum	Va.	Peikin, Daniel	D.C.
Payne, Claude Alvin	Va.	Peimann, Esther Elizabeth	S.D.
Payne, Emily Jeanine	D.C.	Peisner, Arthur A.	D.C.
Payne, Francis Milas	Va.	Pelham, David Elliot	D.C.
Payne, Francis Xavier	Md.	B.S. 1931, Tufts College	D.C.
Payne, Hammond Richard	Md.	Pelikan, Robert Grant	D.C.
A.B. 1947, Emory University	Va.	Pell, Arthur Jack	D.C.
Payne, Hester Sydnor	Va.	Pell, Paul B.	D.C.
Payne, Howard White	Ga.	Pelleri, Leo Maurice	
Payne, John William	Va.	LL.B. 1949, The George Washington University	Va.
Payne, Joyce Lee	W.Va.	Pelletier, Albert Joseph, Jr.	D.C.
Payne, Phoebe Wilson	W.Va.	Pelletier, Avilla A.	Mass.
Payne, Robert Rossne	W.Va.	Pelletier, Beverly Mary	Pa.
A.B. 1941, Shepherd College	Va.	Pelmoier, Albert Leon	
Payne, Rosser Hamilton, Jr.	D.C.	A.B. 1949, University of Pennsylvania	D.C.
Payne, Thomas Tawles	D.C.	Pelto, Victor Hugo	Pa.
Payne, William Darby		Pelton, Marion Henrietta	
A.B. 1940, University of Maryland	Brazil	B.S. 1934, Pennsylvania State Teachers College, Edinboro	
Payro, Roberto Pablo		A.M. 1947, The George Washington University	Min.
A.B. 1946, Haverford College		Pemberton, Henry Walter	
A.M. 1949, University of Michigan	Mass.	A.B. 1947, Amherst College	D.C.
Pazera, Joseph Edward	Tex.	Pembleton, William Charles	Puerto Rico
Peachey, Robert Paul	Md.	Pena, Rafael Hector	Md.
Peacock, Carl LeRoy	Ala.	Pence, Donald Charles	
Peacock, Harold		B.S. 1943, United States Military Academy	D.C.
A.B. 1941, Columbia University	D.C.	Pence, Grace Alice	Calif.
Peacock, Jack Travis	N.C.	Pence, Margaret Langley	
Peake, Evelyn Chloe	D.C.	A.B. 1947, Hollins College	
Pear, Bertram Lincoln		A.M. 1949, Stanford University	Va.
A.B. 1947, The George Washington University	D.C.	Pence, Thomas Arthur	Ark.
Pear, Leon		Pence, Virgil Lewis	Va.
B.S. 1947, University of Maryland	D.C.	Pendell, Martha Jane	W.Va.
Pear, Vivian Charlotte	D.C.	Pendergast, Charles William	D.C.
Pearce, Franklin Lee	D.C.	Pendergast, Edward Henry, Jr.	Va.
Pearce, Ira Hersey	Fla.	Pendergrass, John Mullard	
Pearce, James DeRemer	N.J.	A.B. 1948, Kalamazoo College	
Pearce, James Donald	Md.	M.P.A. 1946, Wayne University	D.C.
Pearce, Marjorie Lou	D.C.	Pendleton, Edmund E., Jr.	
Pearlman, Belle	Md.	B.S. 1942, University of Pennsylvania	D.C.
Pearson, Beverly Stocking		LL.B. 1948, Georgetown University	Md.
A.B. 1940, Vassar College	Min.	Pendleton, Edmund Elliott	D.C.
Pearson, Ellsworth Carl	Ark.	Pendleton, George Cassidy	
Pearson, Eugene Marion	D.C.	B.S. 1942, University of Maryland	
Pearson, Thomas Joseph	Ill.	LL.B. 1948, Georgetown University	W.Va.
Pearson, Vera Maxine	N.J.	Penn, Anne E.	Md.
Peartree, Frank Theodore	N.J.	Penn, William Allen	S.D.
A.B. 1940, William Jewell College	D.C.	Penne, Harold Biggins	D.C.
Peartree, Jennie Ponulak		Penningroth, Ann	Va.
Peaslee, Patricia Dorothy	D.C.	Pennington, Henry Alva	D.C.
B.S. 1917, University of Cincinnati	N.Y.	Pennington, John Byron	Va.
Peatross, Robert Mason		Pennock, George Biddle	Va.
Peck, Bernard		Pennock, Margaret Biddle	Miss.
A.B. 1939, Indiana University	Tenn.	Penny, Lola	N.Y.
A.M. 1941, Columbia University	Iowa	Pentecost, Richard Livingston	W.Va.
Peck, Howard Mather	D.C.	Pepper, Hobart Garrett	Ill.
Peck, Millard, Jr.	Calif.	Peppers, Richard Langford	Pa.
Pecot, Rebecca Koonos		Perce, LeGrand Winfield III	Md.
Peden, Robert Carl		Percival, William Alfred	Md.
B.S. 1928, United States Naval Academy		Perdew, Josephine Louise	Md.
M.S. 1938, University of California	Min.	Perdew, Robert Beasley	Md.
Pederson, Harold Edward	Miss.	Perenich, Margaret Lucy	Puerto Rico
Peel, Edd Foster	D.C.	Perez, Arnaldo	D.C.
Peel, Ella Leuvenia	Va.	Perez, Frank Herbert	
Peel, Fred Welch, Jr.		A.B. 1949, The George Washington University	
B.S. 1939, LL.B. 1942, Harvard University	N.C.		
Peeler, Van Buren	D.C.		
Peebles, Irving Warren			

Perez, Horacio Hugo B.S. 1946, Louisiana State University	D.C.	Peters, Marion Taylor	Va.
Pérez, Jorge Ramón B.S. 1949, The George Washington University	Puerto Rico	Peters, Mary Anne	Va.
Perez, Louis Vincent	D.C.	Peters, Merritt William	D.C.
Perez, Wilda C.	Va.	Petersen, Stanley Wilhelm A.B. 1942, The George Washington University	N.Y.
Perez-Oliveras, Abraham	Puerto Rico	Petersen, Vivian W.	D.C.
Pergand de Barbaud, Hubert Paul	France	Peterson, Betty Lou	D.C.
Pericles, John	Va.	Peterson, Charles David	Maine
Perkett, Emil Elmer	N.Y.	A.B. 1932, Harvard University	
Perkins, Alfred William, Jr.	D.C.	Peterson, Edgar Francis, Jr.	D.C.
Perkins, Billie Louise	Tex.	Peterson, Elinor Anne	Va.
Perkins, Edgar Madison, Jr.	D.C.	Peterson, George Konstantinos	N.C.
Perkins, Mark Edward	D.C.	Peterson, Harold E.	D.C.
Perlman, Al B.	Wis.	Peterson, Harvey Wayne	D.C.
Perlman, Elisheva	Israel	Peterson, Irma Carolyn	Va.
Perlman, Phyllis	D.C.	B.S. 1936, University of Illinois	
Perrin, Norman	D.C.	Peterson, Ivar Clarence	Va.
Perrin, Louis Robert	D.C.	B.S. in A.E. 1938, University of Washington	
Perrone, Jeanne d'Arc May	D.C.	Peterson, Jeanne Elaine	Minn.
Petros, George Peter	D.C.	Peterson, Marion Rucker	D.C.
A.B. 1940, The George Washington University		Peterson, Marjorie Isabel	Mass.
Petrot, Theodore Peter	D.C.	Peterson, Marshall Noel	Miss.
B.S. 1946, M.S. 1949, The George Washington University		Peterson, Nad A.	Utah
Perrott, Samuel Ralph	N.Y.	Peterson, Patricia Ann	Va.
Perrott, Thomas Andrew, Jr.	Va.	Peterson, Robert Cazelles	D.C.
Perrott, Virginia Marie	D.C.	B.S. 1949, Massachusetts Institute of Technology	
Petrucci, Edith Marie	Va.	Peterson, Robert Homer, Jr.	N.C.
Petrussa, John	D.C.	Petkovich, Samuel	Ohio
Perry, Anna Mae	D.C.	Peto, John	N.J.
Perry, Beverly	D.C.	B.S. 1947, College of the City of New York	
Perry, Dorothy Frank	Ky.	Petrakis, George P.	D.C.
Perry, Elena Victoria	N.Y.	Petrack, Edward Joseph	D.C.
A.B. 1948, Hunter College		Petrie, Emily Elizabeth	D.C.
Perry, Grady, Jr.	Ala.	Petrolino, James Stuart	N.Y.
Perry, Harry Carpenter	D.C.	Petroni, Russell William	Va.
Perry, Jesse P., Jr.	Mass.	Petrouisa, Antigone D.	D.C.
Perry, John Kenneth	Colo.	Petrouisa, Stella Demetria	D.C.
Perry, Norman Ray	D.C.	Petrouiska, Josephine Anne	D.C.
Perry, Olive Violet	D.C.	Petschke, George Theodore	Va.
Perry, Robert Charles	Miss.	Petschke, Everett Johns	Va.
Perry, Robert Moore	Mass.	Pettigrew, Jamie Lucille	D.C.
Perry, Thomas Daniel	N.Y.	A.B. 1947, The George Washington University	
A.B. 1949, LL.B. 1949, University of Buffalo		Pettigrew, W. B.	Va.
Perry, Thomas Norman	D.C.	B.S. 1933, Northwest Missouri State Teachers College	
Perschnick, Helen Mas	D.C.	Pettrus, Francis Cornelison	D.C.
Person, Vernon James	Va.	A.B. 1930, University of Hawaii	
Person, Norman Edward	D.C.	Petty, James Spilman	Va.
Pertich, Joseph Louis	Md.	Petty, Richard Alden	Va.
Peselnick, Louis	D.C.	Petty, Sarah Smoot	Va.
Pesoux, Ernest Eugene, Jr.	N.J.	B.S. 1914, Mary Washington College	
Peskind, Sarah Ruth	Ill.	Peyton, William Halliday, Jr.	Va.
Peso, Louis	D.C.	Pfeiffer, Albert Randolph	D.C.
B.S.S. 1938, College of the City of New York		Pfeiffer, Frederick Thompson	D.C.
Peter, Thomas Armistead	Ohio	A.B. 1947, University of North Carolina	
Petentas, Ray Anthony	Pa.	Pfister, Elvera	Ohio
Peters, Albert Fitz-Randolph, Jr.	D.C.	Pluntner, Carl Herman	Va.
Peters, Clarence Oswald	W.Va.	A.B. 1948, The George Washington University	
A.B. 1949, Marshall College		Phelan, Albert Frank	
Peters, Dorothy Ellen	D.C.	B.S. 1949, Loyola University of Los Angeles	
Peters, Gerald Owen	Va.	Phelan, Catherine E.	Wyo.
Peters, Harrietta Sinclair	Va.	A.B. 1936, Clarke College	
B.S. 1948, Madison College		Phelan, James Frederick	Md.
Peters, John Earl	D.C.	Phelan, James Thomas	Pa.
A.B. 1928, A.M. 1934, West Virginia University		B.S.S. 1944, LL.B. 1948, Georgetown University	
Peters, Julius Melvin	Md.		
A.B. 1948, A.M. 1943, The George Washington University			

Phelan, Mary B.	D.C.	Pickering, Richard Carlyle	Ind
Phelan, Patrick John	Va.	A.B. 1948, Indiana University	
Phelps, Allen Warner	D.C.	A.M. 1949, Columbia University	Ohio
Phelps, Robert Francis	Iowa	Pickering, Woodrow Harold	Va.
Phelps, Warren Francis	D.C.	Pickett, Jack Milton	D.C.
Phelps, William Wendell	Calif.	Pickett, Nita Alleyne	
A.B. 1948, The George Washington University		A.B. 1933, The George Washington University	D.C.
Pherson, John Randolph	D.C.	Pickett, Robert Eugene	D.C.
A.B. 1948, The George Washington University		Pickler, William Claude, Jr.	Pa.
Phibbs, Thomas Bewley, Jr.	D.C.	Piczak, Walter Alfred	
Phillipson, Bruce Glueck	D.C.	A.B. 1949, Wilkes College	Va.
B.C.E. 1948, Catholic University of America		Pida, Josephine Boivin	N.Y.
Phillips, Antonina Josephine	Va.	Pidgeon, Joseph William	D.C.
Phillips, Clinton A.	Va.	Piedrahita, Ruben	Md.
Phillips, Donald Twyford	W.Va.	Pierce, Edward A., Jr.	Va.
Phillips, Duncan Boyer	Va.	Pierce, Henry Maurice	
Phillips, Elwin Riley	D.C.	A.B. 1949, The George Washington University	Mich.
Phillips, Frances Guck	Va.	Pierce, James Baker	
A.B. 1914, Wellesley College		B.S. in E.E. 1943, University of Michigan	D.C.
Phillips, Frederick David	D.C.	Pierce, Jana Maria	D.C.
A.B. 1940, The George Washington University		Pierce, John Roderick	Va.
Phillips, Gayle Joseph	D.C.	Pierce, Olivia Baulez	R.I.
Phillips, Gloria Liebner	Md.	Pierce, Russell Joseph	
Phillips, Gordon Allison	Ark.	B.S. in M.E. 1940, Rhode Island State College	Mass.
P. B. 1947, University of Chicago		Pietras, Chester Joseph	Va.
Phillips, Johnnie Maude	D.C.	Piggott, Lillian L.	D.C.
A.B. 1916, Mississippi Woman's College		Pike, Albert Hamilton	Pa.
Phillips, Kenneth Robert	Mich.	Pilch, Anthony Felix	D.C.
Phillips, Laura Marley	Va.	Pileggi, Joseph	D.C.
Phillips, Lawrence Vince	D.C.	Piller, Gertrude Mary	Va.
A.B. 1940, The George Washington University		Piller, Kitty	Va.
Phillips, Lloyd James	Md.	Pillow, David James	D.C.
Phillips, Mary Jane	Va.	Pilon, Dorothy Killean	N.J.
B.S. in Ed. 1934, University of Pennsylvania		Pimentel, Ralph L.	
Phillips, Paul Richard	Calif.	Pimm, Donald Williams	Fla.
A.B. 1947, University of California		A.B. 1949, Dickinson College	D.C.
Phillips, Pauline Grace	D.C.	Pinch, Edward Thomas	D.C.
A.B. 1934, Mississippi Woman's College		Pinching, Ellen Marie	D.C.
Phillips, Richard Ward	Wash.	Pincus, Arthur	
Phillips, Samuel LaFayette	Md.	A.B. 1948, The George Washington University	D.C.
Phillips, Sanders E.	D.C.	Pincus, Marvin	N.Y.
Phillips, Thomas Mansfield	D.C.	Pincus, Saul	
Philpott, Frederick Charles		B.S. 1941, College of the City of New York	N.Y.
B.S. 1947, University of Maryland		Pincus, William	
Philpot, Ruby Myers	Md.	A.B. 1941, Brooklyn College	D.C.
Phinney, Alan Yardley	Va.	A.M. 1948, American University	D.C.
Phippins, Edna Mae	D.C.	Pindell, William Hamilton, Jr.	
B.S. 1941, Mary Washington College		Pine, Donald Kay	
Phippa, Albert	D.C.	A.B. 1949, The George Washington University	D.C.
Piaggio, Hernando Ernesto	Bolivia	Pingley, Sally Belle	Md.
B.H. 1941, University of LaPaz, Bolivia		Pinion, Jack Andrew	
Piatt, Victor Raymond	N.M.	B.S. 1938, University of Nebraska	Mass.
B.S. in Ch. E. 1940, Kansas State College of Agriculture and Applied Science		Pinkham, Fabian	Md.
Picciano, Eugene Michael	D.C.	Pinkham, Richard Collins	Va.
A.B. 1948, The George Washington University		B.S. in Ch.E. 1948, Northeastern University	Kan.
Picciano, Marie Emile	D.C.	Pinks, Robert R.	
Pickens, Homer C., Jr.	N.M.	B.M. 1936, Southwestern College	Ohio
Pickens, John Kenneth	D.C.	A.M. 1947, University of Maryland	
A.B. 1939, LL.M. 1949, The George Washington University		Pins, Rudolph Leopold	D.C.
LL.B. 1943, Harvard University		Pio, Robert Francis	Md.
Pickering, Leonard Leroy	Okl.	Piper, Barbara Jean	Va.
		Piper, Glenn C.	Pa.
		B.S. 1950, Pennsylvania State College	Va.
		Pipich, Frank Joseph	
		Pippin, Millard Franklin, Jr.	

Pirilla, Genese Vincent	Pa.	Poe, Robert Vernon	Va.
Pirog, Peter	Va.	Poel, William Elias	N.Y.
Pitsek, Georgiana	D.C.	A.B. 1937, Brooklyn College	
Pitchford, Leslie Lee, Jr.	Va.	Poll, Sylvester Eugene	D.C.
A.B. 1948, Roanoke College		Pollenbaker, Josephine Mable	D.C.
Pitman, Park Ware	Tex.	Powadzinski, Theodore Chester	Pa.
Pitre, Barbara Faye	La.	Pohlmann, May Lucille	Iowa
Pitt, Harry	N.Y.	A.B. 1944, Augustana College	
Pitt, Mary Libeau	Va.	Pokrovski, Georgi Petrovich	D.C.
Pittenger, John Orrin	D.C.	Poliak, Eva	D.C.
A.B. 1943, Pennsylvania State College		Poland, Florence Walton	Va.
LL.B. 1948, University of Pennsylvania		Polarskev, John, Jr.	Pa.
Pittle, Victor	D.C.	Poloschek, Stephen	Pa.
Pittman, Robert Julian	D.C.	Poljack, Helen	Vt.
Pitts, Denver Callyn	Ohio	Pols, Helen Ruth	D.C.
Pitts, Harold Eugene	D.C.	Poljack, Leonard	Pa.
Piver, Goodman	D.C.	Polard, Floyd Luchian, Jr.	Tex.
Piver, Julius Samuel	D.C.	Polarski, John Ray	Iol.
B.S. 1948, The George Washington		Polack, Robert Emmett	Va.
University		Polow, Charles Howard	Wash.
Playdu, Youphong	Siam	Polosov, Albert Bernard	D.C.
Pizer, Robert Simon	D.C.	Pomerantz, Leonard Hyman	D.C.
Pizer, Samuel	N.Y.	Pomeroy, Jerome Raphael	N.J.
A.B. 1945, The George Washington		Pomeroy, Betty W. P.	Va.
University		A.B. 1947, Middlebury College	
Pizza, Harry Joseph	D.C.	Pomeroy, Harlan	Conn.
Pizzano, Robert Arthur	Mass.	B.S. 1944, Yale University	
Plack, Louise Christine	Conn.	LL.B. 1948, Harvard University	
A.B. 1948, Middlebury College		Pommer, Alfred Michael	Va.
Plaskett, Anne Mary	Pa.	A.B. 1941, Grinnell College	
Plaskett, Anne Elisabeth	D.C.	M.S. 1947, State University of Iowa	
Plasse, Maurice Benoit	D.C.	Pond, Bert Charney	D.C.
A.B. 1949, University of Maryland		Pond, Hartley Linwood	Maine
Platz, Leon David	D.C.	B.S.E. 1947, University of Michigan	
Platt, Frank Leslie	Iowa	M.S. 1948, The George Washington	
Platto, Leon	N.Y.	University	
A.B. 1937, Brooklyn College		Ponder, Percy Lou	Colo.
Platz, Bruce William	Mich.	Ponow, Dell Arthur	Ill.
Playnick, Norma	D.C.	Pons, Aimee Jeanne	D.C.
Playnick, Deidra Renate	Md.	B.S. 1949, University of Maryland	
Plawsky, Seymour	N.Y.	Ponton, Ruth Virginia	Va.
Pleacher, John King	Pa.	B.S. 1937, Virginia State Teachers	
A.B. 1949, The George Washington		College, Farmville	
University		Pool, Louise May	D.C.
Pleasant, John Franklin	Va.	Poole, Chester Hyle	N.Y.
Pletcher, Ralph Weldon	D.C.	Poole, Robert Smallwood	D.C.
B.S. 1948, University of Maryland		Pope, Dorothy Ackermann	D.C.
Plotkin, Leonard	Fla.	Pope, Fannie Fairchild	Colo.
Plotkin, Sally	Pa.	Pope, James Sterling	Colo.
Plouffe, Claire Lucille	D.C.	Popham, James Edward	Va.
Pluzer, Kathryn	D.C.	Pophtin, Wyatt Lee	N.Y.
Plumb, Rosemary Dengler	D.C.	Popovic, Aureliana	D.C.
A.B. 1944, University of Rochester		Portakzy, Estelle	D.C.
A.M. 1948, The George Washington		Porrazzo, Alfred Mark	N.Y.
University		Porro, Anna Rose	N.Y.
Plumpton, Vincent William, Jr.	D.C.	Porro, Ralph Anthony	N.Y.
Plyer, Alfred Hutchinson, Jr.	Tex.	Port, Bennett Edward	N.Y.
B.S. 1948, Rice Institute		A.B. 1949, Syracuse University	
Plyer, Betty Lou Robinson	Md.	Port, William Lockhart	Md.
Plyer, Charles Herbert, Jr.	Fla.	Porteous, Walter Alexander	N.Y.
Plymmer, Ray Earl	Pa.	B.S. 1949, Syracuse University	
B.S. 1948, Pennsylvania State College		Porter, Bennet Allen, Jr.	D.C.
Poage, Jack Pat	W.Va.	Porter, Charles Williamson	La.
B.S. 1949, West Virginia University		A.B. 1948, University of North	
Poch, Donald Richard	D.C.	Carolina	
Poch, Martin Carl	Wash.	Porter, Mildred Mae	D.C.
A.B. 1934, Concordia College, Ind.		Porter, Neil Alfred	Mo.
B.D. 1926, Concordia Theological		Porter, Richard Lee	D.C.
Seminary		Porter, Ross George	D.C.
Pocino, Vincent Angelo	N.J.	Porterheld, Alice Antoinette	Va.
Podolski, Gerald Anthony	D.C.	Porterheld, Marguerite	Va.
Podolski, Norma Roberta	N.J.	Porterheld, Richard Orval	Mich.
B.F.A. 1949, University of		Portuguese, Leonard Kenyon	D.C.
Pennsylvania		LL.B. 1948, Rutgers University	

Portwine, Ralph Samuel	Mich.	Pratt, Curtiss Robert	Ill.
Posay, Shirley Belle	Va.	Pratt, Ray Chase, Jr.	D.C.
Postluszny, Stanley Joseph	N.J.	Pravel, Bernarr Roe	Tex.
B.S. 1942, Northeastern University		B.S. in Ch. E. 1947, Rice Institute	D.C.
Posnak, Marianne E.	Pa.	Prebilich, John B.	D.C.
Posnansky, Rosalie Lucille	Mo.	Preese, William Martin	D.C.
Posner, Leonard Raymond	Conn.	Prencipe, Leonardo	D.C.
A.B. 1930, University of Connecticut		Prencipe, Nicholas Vincent	Pa.
LL.B. 1942, Yale University		Prendergast, James Francis	
Posner, Martin	N.Y.	A.B. 1938, Lafayette College	Tex.
Post, Beverly Suzanne	Va.	Preslar, Stephen Franklin	N.Y.
Postman, Martin Samuel	D.C.	Preslar, Robert Delos	N.Y.
B.S. in E.E. 1946, Virginia		Press, Joel Jay	Va.
Polytechnic Institute		Pressley, Patricia Smith	D.C.
Poston, John William	Md.	Pressutti, Arthur David	Tenn.
Poston, Met Ray	Va.	Preston, Edwin Page	
B.S. 1942, University of Chattanooga		LL.B. 1948, Washington and Lee	
Poston, Raymond Lee, Jr.	Va.	University	Iowa
Poston, Robert Rolland	Va.	Preston, Lenais Todd, Jr.	N.Y.
B.S. 1914, State University of Iowa		Preston, Rita Marie	Me.
Potolichio, Rodney Alphonso	N.Y.	Preston, Shirley Andrew	D.C.
A.B. 1943, Manhattan College		Preston, Walter Harlan	Pa.
Potter, Holbrook Louis	D.C.	Prete, Lucy Theresa	D.C.
Potter, Philip Nelson	Md.	Prevette, Roscoe	N.J.
Potter, Ralph E.	D.C.	Previte, Charles Richard	D.C.
B.M.E. 1945, The George Washington		Prevost, George Mallet, Jr.	N.Y.
University		Prezis, Samuel B.	Me.
Potter, Richard Dale	Ind.	Price, Archie Boyce	D.C.
Potter, Samuel Clark, Jr.	Pa.	Price, Betty Anne	Calif.
Potter, Stanley Eugene	W.Va.	Price, Charles William	Calif.
Potter, Thomas Kelly, Jr.	Tenn.	Price, Curtis Lee	N.Y.
Potter, Thomas Willoughby, Jr.	Ill.	Price, Edward James	N.Y.
B.S. in Ed. 1949, Eastern Illinois		Price, Edwin	D.C.
State Teachers College		Price, Elizabeth	
Potts, Charles Early	Va.	A.B. 1941, Columbia University	
Poulase, Gus Nicholas	D.C.	A.M. 1944, University of Minnesota	D.C.
Pournaras, Stephen William	R.I.	Price, Elizabeth Ruth	
A.B. 1942, Brown University		A.B. 1926, Oberlin College	N.Y.
Powdermaker, Paula Claire	N.J.	A.M. 1926, Columbia University	N.Y.
Powell, Alfred Allen	Va.	Price, Elsa Louise	Va.
Powell, Bonney M.	D.C.	Price, Eve S.	Me.
Powell, Charles Lee	Colo.	Price, Helen Vera	N.C.
Powell, Dainty Mildred	D.C.	Price, Hilary Eugene	Va.
Powell, Donna Lee	Va.	Price, Hoyt Glenn	Me.
Powell, John Frederic, Jr.	Md.	Price, James Holden	Tenn.
Powell, Sally Lou	D.C.	Price, James Travis	Va.
A.B. 1932, Georgia State Woman's		Price, Joseph Lindsey, Jr.	N.Y.
College		Price, Miss V.	Del.
Powell, William Alfred	D.C.	Price, Ralph Louis	D.C.
Power, Andrew Paul	N.Y.	Price, Robert Nelson	
A.B. 1947, The George Washington		A.B. 1918, Haverford College	D.C.
University		Price, Roger Carson	Conn.
Power, Kathryn Stewart	D.C.	Price, Roy Warren	D.C.
B.S. 1919, Columbia University		Price, Walter Withrow, Jr.	D.C.
Powers, Carolyn Isabelle	W.Va.	Price, Zelma Kennedy	Md.
Powers, Chris	D.C.	A.B. 1926, Belhaven College	
Powers, Helen Kathryn	D.C.	Prickett, Hilda M.	Md.
A.B. 1911, Cedarville College		B.S. 1926, Ohio State University	
Powers, James Donald	Md.	Prickett, Robert Lee	N.Y.
Powers, John Thomas	Conn.	B.S. 1918, University of Maryland	Va.
B.S. 1940, Georgetown University		Priest, Gilbert Lyman	Mass.
Powers, Lester Alvis, Jr.	Mich.	Primm, Geraldine Viola	
Powers, Merry Anne	Md.	Prince, James Louise	Pa.
Powers, Richard Lawrence	Ill.	A.B. 1947, Bates College	Va.
Powers, William Joseph	Va.	Pringle, Dorothy Smallwood	Pa.
A.B. 1948, The George Washington		A.B. 1940, Goucher College	Va.
University		Pringle, John D.	Ohio
Powers, William L.	Ohio	Pringle, Nathan Wells	Mass.
A.B. 1920, Princeton University		Prior, Jane Anne	Va.
Pownell, Mary Jean	Ind.	Prior, Philip Bernard	D.C.
Posnak, Morton	N.I.	Pritchard, Robert Linton	
Prather, Elizabeth Ann	W.Va.	Procaemo, Joseph Anthony	
B.S. 1946, West Virginia University		A.B. 1941, College of the City of	
Prather, John Lyle	D.C.	New York	

Prochko, George	Ohio	Pyles, LeRoy Andrew	Md.
Proctor, Arthur Edwin	Iowa	Pynn, George Washington	D.C.
Proctor, Lawrence Barnes, Jr.	N.Y.		
Proctor, Lucy Rebecca	Tex.		
Proleta, Philip Peter	Md.	Q	
Proffitt, Aimes Charrvaud	D.C.		
A.B. 1902, University of Denver		Quackenbush, Robert Allen	Md.
Projector, Dorothy South	D.C.	Quarles, Ferdinand	N.Y.
A.B. 1943, Southwestern at Memphis		Quant, David Washington	N.Y.
Prokarym, Rosalie Marie	Pa.	A.B. 1949, Colgate University	
Prokop, Francis Joseph	Conn.	Quarforth, Carl Donald	Va.
Prossley, George Edwin, Jr.	D.C.	B.S. in Ch.E. 1946, University of Virginia	
B.S. 1948, University of Maryland		Quast, Walter Frederick	Md.
Provenzano, Angelo J.	N.M.	Quattlebaum, Marguerite Rebecca	Va.
A.B. 1938, University of New Mexico		A.B. 1941, Indiana University	
Provenzano, Angelo J.	D.C.	A.B. in L.S. 1939, The George Washington University	
Proyer, Mary Evelyn	D.C.	Queally, Kathleen Erin	D.C.
Proyer, Thomas L.	D.C.	A.B. 1948, Duke University	
Proyer, Betty Jo	Md.	Queen, Admiral Dewey	N.C.
Proyer, William Richard	Ill.	Queen, Francis Vernon	Va.
Proyer, Charles Beaver, Jr.	Va.	A.B. 1941, Berea College	
Proyer, Stanley	Md.	Queen, Jack Reynolds	Ohio
Proyer, Mary Leah	Md.	Queen, Judy A.	D.C.
Proyer, Linnard	D.C.	Quesser, Richard Curtis	Va.
Pucher, Katharine Lloyd	D.C.	B.S. in E.E. 1937, New York University	
L.L.B. 1918, Washington College of Law		Quenstedt, Warren Daley	D.C.
Puchillo, Paul Joseph	Pa.	Quibie, Frank Richard	D.C.
Puckett, Leo Miles	D.C.	Quick, Alice McCordell	Md.
B.S. in Ed. 1939, Southern Illinois University		B.S. 1942, Johns Hopkins University	N.C.
Puentes, Joseph I.	D.C.	Quick, Elsie McQueen	
Puett, William Nelson	N.C.	A.B. 1949, The George Washington University	
Pugh, Landley Coates, Jr.	D.C.	Quick, Robert Thomas	D.C.
Puller, Robert Earl	Va.	Quigg, Barbara Lou	Va.
B.S. 1947, Jamestown College		Quigg, Helen	Va.
Pulliam, James Connor	Ill.	Quigley, Calvin Carlyle	
Pullin, William Jennings	D.C.	A.B. 1948, University of Colorado	
Pulvart, Charles Erenetz	D.C.	Quigley, Thomas William	Md.
B.S. 1920, University of Budapest, Hungary		Quinlan, Robert John	Minn.
Pulver, George M.	D.C.	B.B.A. 1949, University of Minnesota	
Pulver, Mary Josephine	D.C.	Quinlan, Ruth E.	Mass.
Pusdell, Marin Vassileff	La.	Quinley, Hattie Golley	Va.
A.B. 1949, University of Southern California		B.S. 1942, Radford College	
Purdy, Harlan Ralph	N.Y.	Quinn, Francis Russell	D.C.
Purdy, Ramon Tyson	D.C.	Quinn, Henry Emmet	D.C.
Purdy, William Augustus	Va.	Quinn, John Francis, Jr.	Va.
B.S. 1941, United States Military Academy		B.S. 1930, United States Naval Academy	
Purfoy, Christine Ethel	Ark.	Quinn, John Patrick	Ohio
Purmort, George Lawrence	Ohio	Quinn, Leonard Martin	Va.
B.S. 1925, United States Naval Academy		Quinn, Margaret Ann	Minn.
Purnell, Lewis Roy	Pa.	Quinn, Mary Elizabeth	Md.
B.S. in Ed. 1946, Pennsylvania State Teachers College, Kutztown		Quinn, Nora Jean	D.C.
Putnam, Francis George	N.Y.	Quinn, Patricia Ann	D.C.
Putnam, Claude Henry	Va.	Quinnam, John Wilson	D.C.
Putnam, Curtis Carlisle	Va.	Quinnette, Richard Raymond	Wis.
Putnam, Hazel C.	N.C.	Quinones, Nilda M.	D.C.
Putnam, Margaret Anne	D.C.	Quisenberry, Joe Fowler	Ohio
A.B. 1945, University of Maryland		B.S. in Ed. 1939, Ohio University	
Putnam, Charles Pickering	D.C.		
Putnam, John Albert	D.C.	R	
Putnam, Roland Theodore	Pa.	Raba, Elmer Wilbur	D.C.
B.S. 1928, Allegheny College		A.B. 1940, Georgetown University	
Putney, George Bryant	Md.	Raben, Norman	N.Y.
A.B. 1931, University of Wisconsin		Rabin, Joseph Edward	N.Y.
Puttnerman, Felix Maurice	Va.	Racca, Carmine William	R.I.
Puzzini, John	D.C.	Rach, Lois Thelma	D.C.
Pyle, Jane	D.C.	Rackowski, Marcelle Gloria	Pa.
Pyle, Leland Alonzo	Ill.	Radabaugh, Earl Lee	Md.

Raden, Henry	D.C.	Ranklin, Annie Laurie	Miss.
Rader, Stephanis Czech	Va.	A.B. 1940, Hollins College	Va.
A.B. 1937, Cornell University	Pa.	Rankin, Bernice Phillips	D.C.
Radicevic, Katherine Mary	Conn.	B.S. in Ed. 1941, Boston University	La.
Rado, Jeannetta Wilson		Rankin, Billy Frank	La.
A.B. 1940, Vassar College		Rankin, Doris Gates	La.
A.M. 1946, Tufts College	D.C.	B.S. 1936, Louisiana State University	Ores.
Radomski, Jack London		Rankin, George Dabson	Miss.
B.S. 1942, University of Wisconsin	D.C.	Rankin, Robert Rolla	D.C.
Radomski, James Alexander	D.C.	Ranney, John Leslie	Va.
Rael, Frank Joseph	D.C.	Ransom, Gene Mallard	D.C.
Raffelt, Edward James	D.C.	Ransom, Richard Butkus	Va.
Rafferty, Lawrence Clyde	Md.	Ranvier, Gilberte Louise	Ind.
Ragnell, Harold Arthur	Md.	Rapaport, Janet Reba	
B.S. in M.E. 1943, Rhode Island		Rapp, Mary Ruth	D.C.
State College		B.S. 1934, Indiana University	
Ragsdale, Gerald Hamilton	Mont.	Rapp, Raymond Edward, Jr.	
A.B. 1938, Montana State University	Va.	B.S. 1948, The George Washington	
Raia, Edward Clement	D.C.	University	Ill.
Rainard, Nancy Elisabeth	Mass.	Rappaport, Bernard Raymond	Va.
Rainard, Clinic Hubert	Va.	Rapport, Michael Brandies	Pa.
Rainey, Samuel Charles		Raring, Frederick William	Md.
B.S. 1946, Virginia Polytechnic		B.S. 1949, Lehigh University	
Institute	D.C.	Rasmussen, Frank Joseph	
Rains, Clare Gordon	D.C.	B.S. in M.E. 1939, University of	Va.
Rainsbury, Robert Charles	D.C.	Illinois	
Rajala, William Bernhardt	Md.	Rasmussen, Wayne David	
Rajeswari, India	Mich.	A.B. 1937, Montana State University	
B.S. 1942, M.S. 1943, University of		A.M. 1949, The George Washington	D.C.
Mysore, India		University	
M.S.E. 1949, University of Michigan	D.C.	Ratchford, Harold Michael	Mass.
Rakha, Youssef Bahgat	Ohio	B.S. 1940, University of Scranton	Ohio
Ralph, Marie Margaret	Calif.	Ratchffe, Edward Eugene	D.C.
Ralston, Donald McKennie		Rath, Robert Karl	D.C.
B.S. 1937, University of Michigan	Calif.	Rathbone, DeForest Zeller	Miss.
Rambo, Peggy Corinne		Ratherdale, Robert Charles	Va.
B.S. 1944, University of Southern		Ratliff, George David, Jr.	D.C.
California	Panama	Ratliff, William Richard	
Ramirez, Anita	Va.	Ratner, Max	
Ramirez, Beulah Juana	Va.	Rauch, Arthur S.	Ill.
Ramos, James Mariano	D.C.	A.B. 1947, The George Washington	
Ramos, Jose Rivera	D.C.	University	
Ramsey, A. Elizabeth	N.Y.	Rauch, Margaret Leila	Ind.
Ramsey, Gwendolyn Clare	D.C.	B.S. 1938, University of Illinois	Va.
Ramsey, James Bertrand	Mass.	Rauch, Robert Edward	Calif.
Ranney, Walter Andrew		Raum, Jack Ronald	Me.
A.B. 1937, A.M. 1940, University	Conn.	Raven, Richard Austin	Ga.
of Cincinnati		Rawlings, Joseph Edwin, Jr.	
Rand, Alice Marion	N.J.	Rawls, Nancy Vivian	Mass.
A.B. 1915, Wellesley College	Wash.	A.B. 1947, Shorter College	D.C.
Randall, Albert Joseph		Rawnsley, George William	
Randall, Arne William		Ray, Christopher James	
A.B. 1948, Eastern Washington College		Ray, Donald, Page	
of Education	Mich.	A.B. 1941, University of Colorado	D.C.
A.M. 1948, Columbia University		A.M. 1949, The George Washington	Pa.
Randall, Berneta K.		University	Mass.
A.B. 1948, The George Washington	Va.	Ray, Patricia Jane	Fla.
University	Md.	Ray, Russell Jackson	La.
Randall, Bill David	D.C.	Raymond, Barbara June	N.J.
Randall, Courtland Stanley	D.C.	Raymond, Earl Alfred	N.Y.
Randall, Dulcie Teeter		Raymond, Oliver Frederick	D.C.
Randall, Richard Ranier		Raynor, Dorothy	Me.
A.B. 1949, The George Washington	D.C.	Raynor, Marjorie Hildebrandt	D.C.
University		Raynor, William A.	N.J.
Randall, Robert Henry, Jr.		Raynor, William Louis	D.C.
B.C.E. 1941, The George Washington		Razum, Charles Thomas	D.C.
University	D.C.	Re, Anthony John	Md.
Randle, Eleanor Fuller	D.C.	Rea, Helen Jane	
Randolph, Edward Dale Appleton	Va.	Rea, James Magruder	Md.
Randolph, James Harrison	Va.	A.B. 1943, University of Maryland	Ind.
B.S. 1940, University of Tennessee		Rea, Page	
Randolph, John Lewis	D.C.	Read, Beryl Roosevelt	
Rands, Mary Audrey			

Read, Jeanne Elinor B.S. 1947, The George Washington University	D.C.	Rees, Ira Jack A.B. 1934, Municipal University of Wichita	Md.
Read, Kenneth Godwin, Jr.	D.C.	LL.B. 1919, University of Oklahoma	Va.
Read, Mary Sue	Ill.	Rees, John Alva, Jr.	Va.
Reagan, Daniel Francis, Jr.	D.C.	Rees, William Jackson	Md.
Reagan, James Edwin	D.C.	Reese, Elmer Louis, Jr.	
Reagan, Ralph Clifford	Tenn.	B.S. 1942, University of Maryland	Va.
Reah, Susan Rosemary	Md.	Reese, Ira Franklin	Va.
Reardon, Barbara Ellen	Wash.	Reese, James Conniff	Va.
A.B. 1948, University of Washington		Reese, Sara Evelyn	Ga.
Reardon, James Vincent	Mass.	Reeser, Ethel Arlene	Ureg.
B.S. 1939, United States Military Academy		A.B. 1949, Goshen College	N.Y.
M.B.A. 1949, Harvard University		Roeve, Layton Wheeler	Ill.
Reardon, Phillip Henry	Pa.	Reeves, Floyd Orville	
Reardon, Robert Eugene	D.C.	A.B. 1948, University of Chicago	
A.B. 1949, The George Washington University		Reeves, Richard Lewis	Va.
Rearick, Anderson Melvin, Jr.	Pa.	Reeves, Rose Hellman	D.C.
B.S. 1949, Wheaton College, Ill.		Regan, James Andrew	Mass.
Reaves, John Harold	D.C.	Regan, Robert Summers	Va.
B.S. in E.E. 1945, West Virginia University		Reyes, John Timothy	D.C.
Reaves, William Hiram	D.C.	Reyes, Richard Andrew	Va.
Reback, William	N.Y.	Reggia, Frank	Md.
Rebello, Laura Labarthe	D.C.	Regidor, Robert	N.J.
Rebert, Richard Ross	Pa.	Regula, Elmer Lee	D.C.
A.B. 1941, A.M. 1948, The George Washington University		B.S. 1948, Butler University	
Rebrovich, Matt Nick	D.C.	Reh, Emma	D.C.
Reeser, Richard George	Md.	A.B. 1917, The George Washington University	N.Y.
Reitenwald, William Elmer	N.Y.	Rehler, Joseph Edward	
B.S. in M.E. 1948, Purdue University		B.S. in C.E. 1930, Massachusetts Institute of Technology	
Rector, Alfred Rozier	D.C.	M.S. 1947, St. Bonaventure's College and Seminary	
Reid, Lavina Lindsay	Va.	Reichard, Charlotte	D.C.
A.B. 1935, Randolph-Macon College		A.B. 1948, The George Washington University	
Reidington, John Patrick	N.Y.	Reichard, Thomas Woodrow	D.C.
Redemus, Josephine Louisa	N.J.	B.S. 1948, John B. Stetson University	
Reding, Willis Biggar	Va.	Reichow, Estelle Vernon	D.C.
Redkey, Edwin Storer	Va.	Reid, Alexander Blann	Va.
Redler, Welfred Morton	Va.	Reid, Burt Allen	Fla.
Redman, James Russell	N.Y.	Reid, Colin Campbell	Va.
A.B. 1949, Shepherd College		A.B. 1938, Princeton University	
Redman, John Roland	D.C.	Ph.D. 1941, Yale University	
B.S. 1918, United States Naval Academy		Reid, George Bernard	Va.
Redman, Louis Daniel, Jr.	D.C.	Reid, George Earl	D.C.
Redmond, Charles Bernhardt	Md.	Reid, James Sharp	D.C.
Redmond, Joseph Christopher	Md.	A.B. 1937, Cornell University	
B.S.E. 1944, Tufts College		Reid, John Alden	D.C.
B.E.E. 1948, The George Washington University		Reid, Joseph Bernard	D.C.
Redmond, Robert Lafayette	Ga.	Reid, Paul Samuel	Md.
Reed, Colin Eastbrook	Md.	B.S. in E.E. 1944, Virginia Polytechnic Institute	
Reed, David Alvey	D.C.	Reid, Richard Stewing	Va.
Reed, Elizabeth Stafford	D.C.	A.B. 1943, Michigan State College	
A.B. 1938, American University		Reid, Ruth Bull	Va.
Reed, Hallie Mae	Va.	Reid, Warren Featherstone	Wash.
A.B. 1937, The George Washington University		Reid, William Grant	Ala.
Reed, Herbert Jackson	N.J.	Reidenbach, Richard Rohrer	Pa.
Reed, Jean	D.C.	Reidy, John Cornelius, Jr.	D.C.
Reed, John Joseph	D.C.	Reier, Nannielou	Md.
Reed, Mildred Howard	D.C.	A.B. 1948, Goucher College	
Reed, Nona Jean	D.C.	Reiffin, Martin Gansler	N.Y.
Reed, Thomas Russell	D.C.	B.M.E. 1945, College of the City of New York	
Reed, William Clark	Ark.	Reiffin, Sonia M.	Va.
Reed, William Leroy	D.C.	Reifsynder, Harold A.	D.C.
Reeder, Ronald Ronson	Pa.	Reifsynder, Sally Ann Evans	Pa.
A.B. 1943, Shepherd College	W.Va.	Reigart, John Moulton	Kans.
A.M. 1946, The George Washington University		B.S. 1939, United States Naval Academy	
		M.S. 1944, Massachusetts Institute of Technology	

Reikowsky, Ralph Francis	D.C.	Reynolds, Albert Field	Va.
Reilly, Edward Barry	D.C.	B.S. 1948, Columbia University	Va.
B.S. 1949, Georgetown University	Wash.	Reynolds, Carolyn Jane	D.C.
Reilly, George Kenneth Gordon		Reynolds, Chester Forrest	
A.B. 1947, The George Washington University		LL.B. 1949, The George Washington University	Va.
Reilly, Gerard Eugene	N.Y.	Reynolds, Eleanor Jane	Md.
Reilly, John Thomas, Jr.	Mass.	Reynolds, Ethel Delores	N.Y.
Rein, Charlotte	D.C.	Reynolds, Floyd Wilmont	N.Y.
Rein, Edwin Fowler	Iowa	Reynolds, Gary Stewart	D.C.
Reinert, Owen Curtis	Mich.	Reynolds, George Walbridge	Va.
Reinhardt, Arthur F.	N.Y.	Reynolds, Louise Clifton	
Reinke, Jerome John	Wis.	A.B. 1949, Madison College	Pa.
Reintzel, Malcolm Francis	Md.	Reynolds, Margaret Mary	
Reiser, Armand Edmond	Va.	A.B. 1949, The George Washington University	Md.
B.S. 1948, Georgetown University	D.C.	Reynolds, Patricia Amelia	Md.
Reising, Paul Joseph		Reynolds, Ruth Matthews	Va.
B.S. 1947, Xavier University, Ohio		Reynolds, William Lavern	Va.
M.S. 1949, University of Detroit	Pa.	Reynolds, William Neville	
Reisman, Milton Henry		A.B. 1948, The George Washington University	N.J.
B.S. 1948, Drexel Institute of Technology	D.C.	Rezanka, Frank Joseph	Pa.
Reisner, Arthur Frederick	N.Y.	Rezler, John Edward	N.Y.
Reiss, Elliott	Va.	Rhame, Harold Elias, Jr.	
Reiss, Robert Stewart	N.J.	A.B. 1946, Princeton University	Pa.
Reisman, Robert Stephen	N.J.	Rhine, Mary Elizabeth	Mich.
Reisman, Seymour George	D.C.	Rhodes, Benjamin Anthony, Jr.	Va.
Reiser, Lillian		Rhodes, Ramona Virginia	Pa.
B.S. 1941, Wilson Teachers College	Pa.	Rhodes, Robert Jefferson	Md.
Rekas, Joseph	Md.	Rhoderick, Richard Leon	
Remaley, Charles Bertella		B.S. in M.E. 1948, University of Maryland	D.C.
B.S. 1938, Allegheny College	D.C.	Rhodes, Eric Foster	D.C.
Remer, Bertram Robert		Rhodes, James Joseph	Md.
B.S. in E.E. 1946, Duke University	D.C.	Rhodes, Jeanne Audrey	Va.
Remers, Janice	Ohio	Rhodes, Kenneth Edwin	
Remington, Joseph Joy	Ill.	B.E.E. 1949, Georgia Institute of Technology	D.C.
Remke, Mariann	N.Y.	Rhodes, Kenneth Lee	D.C.
Remmler, Olaf Donald		Rhodes, Linwood Adolph	Va.
A.B. 1949, Middlebury College	Va.	Rhodes, Mildred Ann	Pa.
Remsburg, Alice Grainger		Rhodes, Robert Donald	Pa.
B.S. in Ed. 1948, State Teachers College, Farmville	Va.	Rhodes, Robert Garrett	
Remsburg, John Everett		B.S. 1947, University of Pittsburgh	
B.S. in Ed. 1939, University of Virginia	Sweden	M.B.A. 1948, University of Pennsylvania	Ohio
Renborg, Bertil		Rhoneims, Hattie Mae	
A.B. 1948, The George Washington University	Wyo.	B.S. in Ed. 1944, Miami University	Va.
Rendle, Betty Jane		Rhyme, Bruce Wilson	D.C.
A.B. 1945, Stanford University	Wash.	Rhyme, Clinton George	Va.
Rendler, Norbert Joseph	W.Va.	Rhynsbarger, Robert Whitman	D.C.
Renck, Charles Matthew	Ind.	Rice, Carol Lynn	D.C.
Reno, Raymond Howard	Pa.	Rice, Charles Fenton, Jr.	Va.
Repak, Peter N.	Alaska	Rice, Elizabeth Ann	D.C.
Repetti, Edward McNantz, Jr.	D.C.	Rice, Eugene Worthington	
Repetti, Robert James	D.C.	B.S. 1942, West Virginia University	
Reque, Robert Russell	D.C.	M.S. 1947, The George Washington University	Ill.
Reque, Ross Bertha	D.C.	Rice, Geraldine Genevieve	Va.
Resb, David Lewis	D.C.	Rice, Gertrude Bruce	D.C.
Resnick, Samuel	D.C.	Rice, John Francis	
Reverdin, Daniel Louis	D.C.	B.A.E. 1941, University of Detroit	Va.
Revitz, Paula		Rice, John Lator	D.C.
A.B. 1949, University of Maryland	Pa.	Rice, John Wade, Jr.	D.C.
Rexroth, Clarence Dewey, Jr.	Mich.	Rice, Peter Paul	
Rey, Joseph	Mexico	B.S. 1938, Pennsylvania State Teachers College, Mansfield	Md.
Reyes, Raul Gregorio		Rice, Ramon Lee	Va.
B.S. 1946, Georgetown University	Minn.	Rice, Ray Howard, Jr.	Md.
Reynolds, Gerald George		Rice, Robert Lewis	Calif.
A.B. 1943, St. Olaf College	Va.	Rice, Virginia Louise	
Reynard, Charles Lisle		A.B. 1947, University of Southern California	
B.S. in E.E. 1930, University of Delaware			

Rich, Donald Jenkins	Md.	Richwine, Francis Kost	Pa.
Rich, Francis Earl	Miss.	B.S. 1941, Pennsylvania State College	
B.S. 1941, United States Naval Academy		LL.B. 1940, The George Washington University	
Rich, Harold Gilbert	Kans.	Richards, Herbert Betz	Mich.
Rich, Peter Michael	D.C.	Ricketts, Aubrey Eugene	Pa.
Richard, Ralph Stephenson	Va.	B.S. 1949, West Virginia Wesleyan College	
Richards, Burton Morgan	Va.	Ricketts, Max Verna	Kans.
Richards, Eleanor Hamby	N.M.	Ricketts, Noble George	D.C.
Richards, Frederick William	N.Y.	B.S. 1920, United States Coast Guard Academy	
Richards, Glenn Davis	Va.	Ricketts, Robert Lee	Va.
Richards, James Carlin	D.C.	Rickmar, George Marion	Mo.
Richards, Jo-Anne Rose	N.H.	Riddell, Edward Leo	Va.
Richards, John O'Neil	Va.	Riddick, Arch Lockhart, Jr.	D.C.
Richards, Louis Compton	D.C.	Riddick, John Charles	Va.
Richards, Ralph Julian, Jr.		Riddle, Sue	Tex.
Richards, Suzanne Virginia		Riddles, Alvin Joseph	Pa.
A.B. 1948, The George Washington University		B.E.E. 1949, Catholic University of America	
Richards, Therman Lee	D.C.	Ridgeway, Fenton Stanley, Jr.	D.C.
Richards, William Robert	D.C.	Ridgeway, Jesse Edward	D.C.
Richardson, Charles Grant	Ind.	A.B. 1946, The George Washington University	
Richardson, Edward Eugene		Ridpath, Robert Vance	Ind.
B.S. in E.E. 1943, Rose Polytechnic Institute		Riesken, Richard Charles	Ohio
Richardson, Gerald Allen, Jr.	Miss.	Riederer, Adolf Willibald	D.C.
Richardson, Henry Adrien	Md.	Rieger, Rebecca E.	D.C.
Richardson, Henry A.	Va.	A.B. 1940, Hunter College	
Richardson, Howard Robertson	Va.	A.M. 1941, Columbia University	
A.B. 1927, Elon College		Rieger, Samuel	N.Y.
A.M. 1932, College of William and Mary		A.B. 1947, Brooklyn College	
Richardson, James Augustine	D.C.	M.S. 1948, New York University	
Richardson, Joan Margaret	D.C.	Rielly, Thomas Hooper	Pa.
Richardson, Paul Bryant	D.C.	Ries, Carl Gilbert	Wyo.
B.S. 1949, Davidson College		B.S. 1947, University of Wyoming	
Richardson, Peter Wentworth	Mass.	Rieser, Samuel	N.Y.
Richardson, Robert Owen	Mo.	A.B. 1947, Brooklyn College	
B.S. 1946, Drury College		M.S. 1948, New York University	
Richardson, Samuel Churchwell	Ala.	Ruggan, James Maury, Jr.	Tex.
Richardson, Thomas Totten	Va.	Riggins, Dale Dwight	Md.
Richardson, Walter John	Conn.	Riggs, Annette Musher	Va.
Richardson, William Benjamin	Pa.	Riggs, Bradner Charles	Va.
Richter, Walter Francis	Ohio	Riggs, Edwin Eugene, Jr.	D.C.
Rieser, Leonard	Va.	Riggs, Robert Meadham	Ky.
Richardson, Edna Marie	Ohio	Ries, Charles Francis	D.C.
A.B. 1949, Ohio University		Riley, Francis Angelo	Pa.
M.N. 1942, Western Reserve University		M.D. 1928, Georgetown University	
Riches, LeRoy Milburn, Jr.	Va.	Riley, Francis C.	Md.
Riches, Stephen Olin, Jr.	D.C.	Riley, Hugh Allen	Va.
Richman, Alice Janet	D.C.	Riley, Jane Frances	D.C.
Richman, Robert William	Colo.	Riley, Jeremiah Thomas	Mont.
A.B. 1944, Colorado College		Riley, John Edwin	D.C.
B.S. 1947, Colorado Agricultural and Mechanical College		Riley, Mary Madeleine	N.J.
Richmont, Fred Pierce	Fla.	A.B. 1945, A.M. 1949, University of Pennsylvania	
Richmore, George Lowell	D.C.	Riley, Paul Sterling	Va.
B.S. 1920, United States Naval Academy		Riley, Vernon Todd	D.C.
M.S. 1928, Columbia University		Rinaldi, Eugene	Pa.
Richmond, Alfred Wright	D.C.	Rindt, Kenneth Edward	Wis.
Richmond, Claude M.	Va.	A.B. 1941, University of Wisconsin	
B.S. 1924, College of William and Mary		A.M. 1945, University of Minnesota	
A.M. 1946, The George Washington University		Riner, William Carter	D.C.
Richmond, Joseph Howard	Md.	Rine, Jack Austin	Va.
B.S. 1949, University of Maryland		Rine, Paul Donald	N.C.
Richmond, Roy George, Jr.	Va.	Rinzel, Harold	N.Y.
Richmond, Susan Virginia	D.C.	Ringer, Eli	N.Y.
A.B. 1917, Randolph-Macon Woman's College		Rink, Grace Marion	Va.
Richter, Jean Anne	D.C.	A.B. 1922, Ohio State University	
Richter, Richard Martin	D.C.	Rinne, Ovin Michael	Colo.
		Riordan, Margaret Mary	Mo.
		Rios-Lugo, Miguel Juan	Puerto Rico
		Risdon, John Louis	Va.

Riseling, Joseph Bernard	D.C.	Roberts, Ben Lomond	Md.
Ruskin, Aaron	Md.	Roberts, Beverley Jean	D.C.
Rissler, Robert Lorain	W.Va.	Roberts, Beverly Ford	Va.
A.B. 1947, Shepherd College		A.B. 1948, University of Virginia	Tex.
Rist, Janice R.	Nebr.	Roberts, Charles Monroe	N.Y.
Ritchey, Mary Ruth	Va.	Roberts, Charlotte Anne	Va.
A.B. 1947, Mount Holyoke College		Roberts, Donna Louise	D.C.
Ritchie, Calvin Donald	Va.	Roberts, Eleanor Elizabeth	N.J.
Ritchie, Frederick Monks	Md.	Roberts, Henry, Jr.	Tenn.
B.M.E. 1949, The George Washington University		Roberts, Heyward Bradford	
Ritnour, Diane Yvonne	D.C.	B.S. 1924, United States Military Academy	
Ritter, Colin	D.C.	Roberts, James Franklin	Md.
B.S. 1941, Wilson Teachers College		Roberts, James Winfield, Jr.	Va.
Ritterpusch, Irvin John	Md.	Roberts, Jennings Nicholas	D.C.
A.B. 1950, University of Maryland		A.B. 1919, Morris Harvey College	
Rittmann, Dean Vincent	Tex.	LL.B. 1941, LL.M. 1945, Georgetown University	
Ritts, Roy Elliot, Jr.	D.C.	Roberts, John Raymond	Ind.
A.B. 1948, The George Washington University		Roberts, John Summerfield, Jr.	Va.
Ritzenberg, Albert	D.C.	B.S. 1941, University of Virginia	D.C.
A.B. 1942, University of Maryland		Roberts, Lewis Ross	Fla.
Ritzenberg, Madeleine Snowden	D.C.	Roberts, Lincoln Edwin	Va.
B.S. in P.E. 1940, University of North Carolina		Roberts, Margaret	
Ritzenberg, Saul	D.C.	M.E. 1940, University of Pittsburgh	D.C.
Rivas, Luis Rene	Fla.	Roberts, Marshall Lee	Va.
A.B. B.S. 1934, La Salle College, Havana, Cuba		Roberts, Mary Kendall	Ark.
A.M. 1938, Quebec Technical School		Roberts, Mary Martina	D.C.
Rivera, Andres	Puerto Rico	Roberts, Nancy Catherine	Ind.
Rivera, Emilio	Puerto Rico	Roberts, Pauline	Va.
Rivera, Fernando Jose	Puerto Rico	Roberts, Perry Leonard	
Rixey, George Young	D.C.	B.S. 1938, Oklahoma Agricultural and Mechanical College	Ohio
B.S. 1947, University of California		Roberts, Raymond Francis	
Rixon, George Edward	Md.	A.B. 1949, Ohio University	Va.
Rixse, John Albert	Va.	Roberts, Richard Edwin	D.C.
Rizik, Michel	D.C.	Roberts, Richard Mansfield	
A.B. 1948, Amherst College		LL.B. 1948, The George Washington University	
Rizzo, Ann C.	N.Y.	Roberts, Russell Meade	D.C.
Rizzolo, Lillian Sanders	La.	Roberts, Thomas Arthur	D.C.
A.B. 1948, Trinity University		Robertson, Bedford Shelton, Jr.	N.C.
A.M. 1949, Tulane University		Robertson, Blanche Gardner	
Rizzuto, Frank Vincent	N.J.	A.B. 1925, Guilford College	Ark.
Roa, Paul Arturo	D.C.	Robertson, Charles Marion	
Roach, Henry Keeling	Va.	B.S. 1938, United States Naval Academy	
Roamer, James Mahan, Jr.	D.C.	Robertson, Corinne Phelps	D.C.
Roane, Melvin Chester	Okla.	Robertson, Eunice May	D.C.
Robb, James Lawrence	Va.	Robertson, Floyd L.	Ark.
Robbin, Joseph Sigmund	D.C.	A.B. 1918, Arizona State Teachers College, Tempe	
Robbins, Ann D.	Mass.	Robertson, Jack Rodney	D.C.
A.B. 1945, Wellesley College		Robertson, Joseph William	Tex.
Robbins, Chandler Seymour	Md.	B.S. 1947, Agricultural and Mechanical College of Texas	
A.B. 1940, Harvard University		Robertson, Malcolm Higgins	Minn.
Robbins, Frank Edward, Jr.	N.Y.	A.B. 1948, University of Minnesota	Fla.
B.Ch.E. 1944, Rensselaer Polytechnic Institute		Robertson, Margaret	Va.
Robbins, Glenn Kingsland	Mo.	Robertson, Richard Dean	
B.S. in Ch.E. 1947, Washington University		B.S. 1941, Syracuse University	Okla.
Robbins, Lois M.	Va.	Robertson, Robert Earl	Md.
Robbins, Louis Peters	D.C.	Robertson, Roger E.	
Robbins, Walter Lewis	D.C.	B.S., M.S. 1943, Massachusetts Institute of Technology	
Roberson, Edwards Pierce	D.C.	Robertson, Wilbert Joseph	D.C.
B.S. 1939, University of South Carolina		Robertson, William George	D.C.
Roberson, Elbert Belmont, Jr.	D.C.	B.S. 1948, University of North Carolina	
B.S. 1940, The George Washington University		Robey, Frances Jean	Okla.
Roberson, James Edgar	D.C.	Robichaux, Emily Louise	N.Y.
Roberson, John Milton	Va.	A.B. 1943, Hunter College	
Roberson, William Donald	D.C.	Robin, Bennett Allen	D.C.
Roberts, A. Willis, Jr.	Va.		
A.B. 1947, Dartmouth College			

Robin, Eugene Debs B.S. 1945, M.S. 1946, The George Washington University	D.C.	Roddis, Louis Harry, Jr. B.S. 1939, United States Naval Academy	Minn.
Robin, Rosemary Jamesina	D.C.	M.S. 1944, Massachusetts Institute of Technology	
Robinette, Marian Strom	Wash.	Rodenbeck, Frederick Ludwig, Jr. A.B. 1940, A.M. 1941, University of Nebraska	D.C.
Robinette, Raleigh Carson	Md.	Rodenhi, Donald Lee	D.C.
Robins, James Edward	Nebr.	Rodgers, David Arthur	N.C.
Robinson, Alfred Arnold B.S. 1932, Agricultural and Mechanical College of Texas	N.Y.	Rodgers, Edward Oscar B.S. 1944, University of Arizona	Ariz.
Robinson, Anna Marion B.S. 1934, Cornell University	N.Y.	Rodgers, James Edwin	Pa.
Robinson, Armand Irving B.S. 1949, Drexell Institute of Technology	Pa.	Rodgers, John Robert B.S. 1915, Fordham University	N.Y.
Robinson, Aubrey Monroe, Jr.	N.C.	Rodgers, John William	Pa.
Robinson, Carolyn Alma	Va.	Rodgers, Marjorie Virginia	Pa.
Robinson, Charles Clark B.S. 1939, Fordham University	N.Y.	Rodgers, Robert Eugene	Va.
Robinson, Cora A.B. 1948, University of Pittsburgh	Pa.	Rodkin, David Willard A.B. 1940, Yale University	D.C.
Robinson, Earl Howard	D.C.	Rodis, Joseph Sydney	D.C.
Robinson, Edgar Louis	D.C.	Rodriguez, Ana Margarita	N.Y.
Robinson, Eugene Bell	Nebr.	Rodriguez, Jose Antonio	Puerto Rico
Robinson, George Harvey A.B. 1936, West Virginia University	Md.	Rodriguez, Luis Osorio A.B. 1941, A.M. 1949, The George Washington University	
Robinson, Grace Geneva Standley A.M. 1941, University of Pittsburgh	Mo.	Rodulfo, Leonore	N.M.
Robinson, Guy Harold, Jr.	Md.	Rodwell, Victor William A.B. 1942, University of New Mexico	D.C.
Robinson, Harold Leroy	Colo.	Roe, Ion Olavsen	Norway
Robinson, John Wesley	Md.	Ruell, Edgar Allen	Ind.
Robinson, Lawrence Edward	Ill.	Roopke, Lewis A. Stein	D.C.
Robinson, Lester James, Jr.	D.C.	Rugal, William Walter	Va.
Robinson, Norma Jennette	D.C.	Romers, Charles Joseph	Md.
Robinson, Norman Julian A.B. 1941, University of California	Va.	Romers, Charlotte David	Ky.
Robinson, Peter Arthur	Maine	Romers, Donald Neil	D.C.
Robinson, Philip B.S. 1940, Boston University	Mass.	Romers, George Johnston	Calif.
Robinson, Robert Strother B.S. in P.E. 1949, The George Washington University	D.C.	Romers, Henry Gless	Va.
Robinson, Thomas Adams	D.C.	A.B. 1941, Indiana University	
Robinson, Warren Clayton	D.C.	M.S. 1948, University of Chicago	
Robson, Arthur Leo	Md.	Rogers, Harold John	Pa.
Robson, Fabian John	D.C.	A.B. 1947, University of Scranton	
Robtscher, Jonas Bondi, Jr. A.B. 1942, Brown University	D.C.	Rogers, Jewell Edward	Ind.
J.D. 1948, The George Washington University		Rogers, Joan Lee	Va.
Roblee, Dana Bush B.S. 1927, St. Bonaventure's College and Seminary	D.C.	Rogers, Joseph Louis, Jr.	Md.
M.S. 1932, New York State Teachers College, Albany		Rogers, Preston Charles, Jr.	Md.
Robson, Daniel Francis	D.C.	A.B. 1949, Johns Hopkins University	Wis.
Rock, Herman Henry B.S. 1942, State College of Washington	Wash.	Rogers, Ronald	N.C.
Rock, Joseph Oliver LL.B. 1943, Columbus University	D.C.	Rogers, Rower Joseph	Md.
Rockowitz, Jerome Bernard	N.Y.	Rogers, Thomas Alphonso	Md.
Rockwell, Chester Scott A.B. 1947, Shepherd College	Va.	Rogers, William Michael	Va.
Rockwell, Franklin Abraham A.B. 1941, Shepherd College	Va.	Ross, Nathaniel Hyman A.B. 1944, A.M. 1955, New York University	
Rockwell, Hilkey Cleveland B.S. 1944, Maryland State Teachers College, Frostburg	Md.	Bozinski, Edward Eugene	D.C.
A.M. 1948, Columbia University		Rohland, Leo	N.Y.
Rodas-Garcia, Adela	Puerto Rico	Rohlf, Paul Anthony	Pa.
Rodda, Harry Edwin, Jr. B.S. 1940, University of Alabama	Va.	Rohrs, Beverly Ann	Md.
Rodman, Elroy Lou	Ala.	Rolenson, Julio Gustavo	D.C.
		Rolle, Cloyd Mayne	Va.
		Roll, Stephen A.B. 1948, Johns Hopkins University	N.Y.
		Roller, Franklin Coiner B.S. 1949, University of Arizona	D.C.
		Rollins, Alma Frances B.S. 1945, Wilson Teachers College	D.C.
		Rolnick, Robert Franklin	D.C.
		Rolph, John Fletcher	N.Y.
		Roman, Stanley Alan	D.C.
		Romanoff, Julius Samuel A.B. 1943, Brooklyn College	N.Y.
		Romanowski, Harold Stanley	Ind.
		Romanovsky, George Joseph	Pa.

Romero, Mario Saavedra A.B. 1938, National University of Mexico	Tex.	Rosenblatt, Harry Myer B.S. 1948, The George Washington University	N.Y.
Romero, Theodore Robert	Md.	Rosenblatt, John Jacob	D.C.
Roumet, Joseph Henry	Pa.	Rosenblum, David Joseph	N.Y.
Rummel, Wilfred H. B.S. 1947, North Dakota State School of Science	D.C.	Rosenblum, The George Washington University	D.C.
Rood, George Henry A.B. 1939, University of Florida	Fla.	Rosenblum, Stephen Clyde	N.Y.
Roof, Michael Kitching	D.C.	Rosendorf, Betty R.	D.C.
Rooney, William Albert	Wash.	Rosendorf, Stanley Bernard B.S. 1948, University of Maryland	Md.
Roop, Doris Duvall	Md.	Rosenshine, Shirley Ruth	D.C.
Ross, Kinsey Henry	Ill.	Rosenson, Leon Mendel	D.C.
Roussevelt, Diana	Mich.	Rosenson, Vivian Carmel	D.C.
Ross, Barbara Fno	Calif.	Rosenthal, Alan Henry	D.C.
Roper, Mona Vee	D.C.	Rosenthal, Bernard	N.Y.
Ropp, Wade Brown	Va.	Rosenthal, Donald Currie	D.C.
Rosque, Robert Marciano	Pa.	Rosenthal, Elsie Jean	D.C.
Rosque, Ruth Helen	D.C.	Rosenthal, Joseph	D.C.
Rosman, Harry Eugene	D.C.	A.B. 1939, Brooklyn College	D.C.
Rosenda, Stefan L.L.B. 1942, University of Poznan, Poland	D.C.	A.M. 1940, Columbia University	D.C.
Rosakrans, Ruth Isabelle	N.J.	Rosenthal, June Pamela	D.C.
Rose, Alan Conrad B.S. 1944, A.B. 1947, Massachusetts Institute of Technology	W Va.	Rosenthal, Melvin Stanley A.B. 1949, The George Washington University	D.C.
Rose, Amel Edward	N.Y.	Rosenthal, Myra Natalie	D.C.
Rose, Arthur E. B.S.S. 1948, College of the City of New York	N.Y.	Rosenthal, Saul A.B. 1949, Catholic University of America	D.C.
Rose, Carl Leon	D.C.	Rosenthal, Sidney	Va.
Rose, Donald Lewis B.S. in Ch.E. 1947, Pennsylvania State College	Pa.	Rosenthal, Jacob Wolfe B.S.S. 1949, College of the City of New York	D.C.
Rose, Frank Louis	N.Y.	L.L.B. 1942, Harvard University	Md.
Rose, Gareth Westbrook	Va.	Roseway, Nicholas Raymond, Jr.	Va.
Rose, Hal Thomas B.S. 1943, United States Military Academy	Pa.	Rosin, Donald Everett	D.C.
Rose, Herbert Edgar	D.C.	Rosman, Elizabeth Nejedly	Md.
Rose, Jeanne A.B. 1943, College of William and Mary	Md.	Ross, Alfred Sumner	D.C.
Rose, Ruth Butterworth	Va.	Ross, Bob	Va.
Rose, William George, Jr.	Md.	Ross, C. Haldegarde B.S. 1943, State Teachers College, Farmville	Pa.
Roseberry, Leroy Wallace	Va.	Ross, Daniel Michael A.B. 1946, A.M. 1948, The George Washington University	Pa.
Roseman, Byron David	Mass.	Ross, Gerald	N.Y.
Rosen, David Selig	N.Y.	Ross, Helen Elizabeth B.S. 1948, The George Washington University	D.C.
Rosen, Herbert Harry	D.C.	Ross, Ian Kenneth	N.Y.
Rosen, Libbey	D.C.	Ross, Irving Jerome A.B. 1948, Brooklyn College	Md.
Rosen, Sam	D.C.	Ross, Joseph Hunter	D.C.
Rosenbaum, Gloria Josephine	Del.	Ross, Keith Austin	D.C.
Rosenberg, Betty	D.C.	Ross, Malcolm Kenneth, Jr.	D.C.
Rosenberg, Hyman Louis	D.C.	Ross, Marvin Stanley	D.C.
Rosenberg, Irwin Jack	D.C.	Ross, Nona Lee Taliaferro	D.C.
Rosenberg, Max A.B. 1949, Hunter College	D.C.	Ross, Ronald McKenzie	N.J.
Rosenberg, Morris	D.C.	Ross, Ruth A.B. 1946, The George Washington University	D.C.
Rosenberg, Seymour Morton B.E.E. 1944, College of the City of New York	N.Y.	Ross, Samuel B. A.B. 1941, University of Pittsburgh	D.C.
Rosenberg, Solange	D.C.	A.M. 1924, Ph.D. 1931, Columbia University	D.C.
Rosenberg, Walter Saul	N.Y.	Ross, William Hicks	D.C.
Rosenberg, William Theodore	Ohio	Rosse, Robert Morton	D.C.
Rosenberger, Gabriella L. A.B. 1947, Brooklyn College	N.Y.	Rosen, Jack Leopold	R.I.
A.M. 1948, Columbia University	Va.	Rossi, Henry A.B. 1949, The George Washington University	Conn.
Rosenberger, Mary Jane		Rossi, Marian Elizabeth	

Rossi, Peter Anthony, Jr. B.E. 1948, Syracuse University	N.Y.	Rowe, Willis Case A.B. 1949, The George Washington University	D.C.
Rosner, Samuel Uriah A.B. 1947, Allegheny College	Pa.	Rowell, Russell	Va.
Rosson, Barbara Ruth	D.C.	Rowen, Thomas Howard	D.C.
Rothberg, Samuel B.	N.Y.	Rowitz, Bernard	N.J.
Rothberg, Morris A.B. 1941, Cornell University	N.Y.	Rowles, Joan Eleanor A.B. 1948, Rutgers University	Iowa
Rothhoefler, David Austin B.S. 1949, University of Maryland	Md.	Rowlett, Gene Ellington A.B. 1948, Mary Washington College	Va.
Rothney, Florence Price M. in Ed. 1933, Harvard University	D.C.	Rowse, Katharine Louise Roxon, Daniel	N.Y.
Rothrock, John Allen, Jr. B.S. 1945, Northwestern University	Va.	A.B. 1940, Brooklyn College	D.C.
Rothrock, Roger Lee A.B. 1949, B.S. 1940, Indiana University	Ind.	Rowe, Margaret Esther Rover, Frederic Lee	D.C.
Rothstein, Nathaniel Rothwell, Naomi D.	N.Y.	Rovance, Donald Carver Rozansky, Beverly Ruth	Md.
B.S. 1939, Cornell University	N.Y.	Rozek, Ann Mary Rozo, Jorge Gomez	D.C.
Rothman, Irvine Jacob B.S. in M.E. 1946, Virginia Polytechnic Institute	N.Y.	Rozelle, Frederick Russell Ruck, James Clay	Colombia
Rothman, Eugene Orbeck A.B. 1947, University of Hawaii	Wis.	Ruben, Annette Ruben, Louis Leonard	Va.
A.M. 1949, The George Washington University	Wis.	Ruben, Maurice B.S.C. 1930, Northwestern University	D.C.
Rothman, Leo Mittelstadt	Wis.	Ruben, Max Samuel Rubenstein, Norman Hartley	D.C.
Rosell, Anthony Francis	N.Y.	Rubenstein, Ruth Sylvia Rubenstein, Sanford	D.C.
Rothman, Louis John	D.C.	Rubenstein, Viola Ellen	N.Y.
Roubaleux, Ramon Arthur	S.D.	Rubin, Arnold Donald	N.Y.
Roudabush, Robert Mackey B.S. 1949, University of Maryland	D.C.	Rubin, Marvin A.B. 1940, The George Washington University	Md.
Roughlan, Arnelan Ernest, Jr. Rouleau, James Petre	Va.	Rubin, Norma Rubin, Sally Maxine	Va.
Rouleau, Wilbur Glasgow A.B. 1942, Catholic University of America	Md.	Rubinstein, Irvin	N.J.
Rountree, William Howard Rountree, Robert Manning	Fla.	Rubio, Carlos Enrique Ruboy, Jordan Sumner	Puerto Rico
A.B. 1938, Mercer University	Va.	Ruckel, Neri Florence Rucker, Jerry Carlton	Mass.
Royce, Edward Everett L.B. 1940, The George Washington University	Va.	A.B. 1949, University of Virginia Rucker, Martha Coby	Tenn.
Roush, Lawrence Carmen Roussell, Louis Chapman	N.Y.	A.B. 1936, University of Richmond	Va.
Roussell, Marie Roussell, Irene	D.C.	Ruczko, Joseph Anthony Rudd, Vilva Elaine	Md.
Rovner, Louis Marion B.S. 1934, Rutgers University	D.C.	B.S. 1941, M.S. 1932, North Dakota Agricultural College	D.C.
Rovner, Sara Rowan, Edmund Charles	Pa.	Rudden, Peter Vincent Ruddock, Harold Douglas	N.Y.
B.S. 1944, United States Naval Academy	D.C.	Rudewick, William Kenneth B.S. in Ed. 1947, Pennsylvania State Teachers College, Millersville	Calif.
Rowan, John Carey Rowan, Louis Peet	Pa.	Ruditz, David A.B. 1949, The George Washington University	D.C.
Rowan, Michael Beatty Roward, Roger Benjamin	Va.	Rudman, Gerald Earl A.B. 1949, University of Maine	N.Y.
Rowe, Florence Louise Rowe, Frank Joseph	Conn.	Rudolph, Flora Rudy, Lester Eugene	Maine
Rowe, George Frederick Rowe, Jack James	Va.	Rudy, Robert Thomas Rudykoff, Arthur Albert	D.C.
B.S. 1940, College of the City of New York	N.J.	B.Ch.E. 1948, Polytechnic Institute of Brooklyn	N.Y.
Rowe, Kathleen Wilson Rowe, Lionel Lewis	D.C.	Rue, Andrew Hazel Rue, Gloria Hope	D.C.
B.S. 1921, United States Naval Academy	Va.	Rueda, Richard Jr. Ruff, Bryson LaMar	D.C.
L.L.B. 1930, The George Washington University	Va.	Rugen, Barbara Dorsch A.B. 1942, College of Wooster	Fla.
Rowe, Shirley Case Rowe, William Dennison, Jr.	D.C.	Rugen, Paul Robert B.S. in Ed. 1949, Rutgers University	D.C.

Ruggles, Jane	Md.	Ruths, Carl Joseph	Pa.
A.B. 1943, University of North Carolina		Rutledge, Jean Ann	D.C.
Ruiz, Amelia Mary	D.C.	A.B. 1947, Indiana University	Va.
Ruiz, Eva	D.C.	Rutledge, John	Va.
Ruiven, Frank Raymond	Ill.	Rutledge, Robert Clinton	
Rullman, Anne Harris	Va.	A.B. 1947, University of Virginia	Md.
Rumbough, Patricia Kings	Va.	Rutler, Jack Lee	D.C.
Rumbough, William Samuel	Va.	Ruttkay, Eva Maria	D.C.
B.S. in E.E. 1927, A.M. in Ed. 1946, The George Washington University		Rwyer, John Martin	N.Y.
Rumford, Donald Chester	Va.	Ryan, Burton Thomas	D.C.
Rumley, Lucy Johnston	D.C.	Ryan, Charles Patrick	Md.
Runge, Deane	N.Y.	Ryan, Dorothy Eloise	Ky.
Runkle, Denton William	Va.	Ryan, Dorothy Shannon	R.I.
Runkle, Irvin Lester	Ohio	Ryan, Edward Francis	Pa.
A.B. 1948, Muncie College		Ryan, Edward Joseph	Va.
Runyon, Barbara Diane	Md.	Ryan, Edward Thomas, Jr.	
B.S. 1936, College of Wooster		Ryan, Jack Thomas	
A.M. 1946, The George Washington University		Ryan, James Anthony	
Rupert, Jack Burns	Va.	B.S. 1947, College of the Holy Cross	N.Y.
Rupert, Mary Martha	Ga.	L.L.B. 1947, Cornell University	N.Y.
Ropp, Norman Paul	Iowa	Ryan, James Joseph	D.C.
Roppelt, Ruth	Va.	Ryan, John Alexius	
Rosberg, Betty Jo	Tenn.	Ryan, John Clifford	
Rosk, Betty	Wia.	A.B. 1947, Iona College	Md.
Ross, Cecil Martin	Md.	Ryan, John Powell	W.V.
Ross, Wilbur Joseph	Calif.	Ryan, John Thomas	N.Y.
A.B. 1938, University of California		A.B. 1945, West Virginia University	D.C.
Russell, Anne Carter	Va.	Ryan, Rita Marie	
Russell, Betty Lucile	D.C.	Ryan, Robert Edwin	
Russell, Conrad Norman	Md.	Ryan, Robert Emmet	
Russell, DeAlton	Calif.	B.S. 1947, Temple University	Mass.
Russell, Denver Lee	Ohio	Ryan, William Edward	
A.B. 1947, Mount Union College		B.S. 1946, B.S. in E.E. 1947, University of Michigan	Wa.
Russell, Helen Louise	D.C.	Rybak, Alice Mary	
Russell, James Miller	D.C.	B.S. 1945, M.S. 1948, University of Wisconsin	Or.
Russell, Kenneth Monroe	Oreg.	Ryder, Dorothea Jeanne	N.Y.
Russell, K. Carson	Va.	Ryder, Elizabeth Margery	Conn.
Russell, Melvin Lewis	Kans.	Ryder, James Andrew	Mass.
Russell, Phyllis June	D.C.	Ryder, Robert Burton	D.C.
Russell, Robert Raymond	D.C.	Rudholm, William Norman	Md.
B.S. 1942, United States Coast Guard Academy		Rykhus, Douglas Joseph	
Russel, Ronald Lee	W.Va.	Rymer, Joseph Rives	
Russell, Stanton Best	D.C.	Rymer, Thomas Arrington	Md.
B.M.E. 1949, The George Washington University		B.C.E. 1948, Cornell University	
Russell, Thomas Hale	Va.	Rynders, Gerald Francis	
A.B. 1949, Harvard University		B.S. Ceramics Eng. 1943, Alfred University	D.C.
Russell, William Augustine, Jr.	Va.	Ryon, Joseph William	
Russell, William David	Mo.		S
A.B. 1938, University of Missouri		Saba, Michael	Pa.
Russell, William Fred	Md.	Sabatine, Paul Leopold	Pa.
Russler, William	N.Y.	Sabatini, Edmund John	N.Y.
B.S. 1942, College of the City of New York		Sabellia, Richard, Jr.	D.C.
Russo, Frank Nicholas	Md.	Sabine, Edward Blais	Mass.
B.S. 1939, Boston University		Sabine, Gardner Blake	N.Y.
Ruszkiewicz, Joseph Edward	Pa.	A.B. 1949, Harvard University	D.C.
B.S. in E.E. 1948, University of Pittsburgh		Sabot, Allen	R.I.
Rutherford, Martha Skillman	Pa.	Saccardi, Clarence Richard	N.Y.
A.B. 1948, Wellesley College		Sacco, Dorothy Ann	Va.
Rutherford, Reginald	Va.	Sachs, Allen Harold	
B.S. 1944, United States Naval Academy		Sachs, Theodore	
Rutherford, Samuel James	Pa.	A.B. 1944, Brooklyn College	Ga.
B.S. 1948, Lebanon Valley College		A.M. 1949, Columbia University	
		Sack, Edward Emanuel	
		B.S. in Ae.E. 1946, Georgia Institute of Technology	
		M.B.A. 1949, Harvard University	Pa.
		Sackman, Robert	

Sacks, Jacob Milton	D.C.	Salzberg, Ruth	D.C.
Sachs, Lester Leslie	N.Y.	Salzer, Joseph	Md.
Sadek, Amina	Egypt	Samaha, Leslie Halim	D.C.
Sadler, Emmett Garner	D.C.	Samakow, Beverly Retha	D.C.
Sadowski, Larry Valery	Mich.	Sambo, Rappael	D.C.
Sadowsky, Gersten	N.Y.	Samet, Mary Ann	Mo.
B.M.E. 1947, College of the City of New York		Samuel, University of Missouri	Pa.
Sador, Hillard Edwin	Md.	Samolsky, Myles Stanford	
Sador, Marvin Phillip	D.C.	A.B. 1949, Washington and Jefferson College	
A.B. 1947, The George Washington University		Samoyek, Edna Jean	Ohio
Sadusky, Alfred A.	Pa.	A.B. 1949, Stanford University	
A.M. 1940, Columbia University		Sangowitz, Charles Salney	D.C.
Saffel, Louise Lillard	Va.	B.M.E. 1948, College of the City of New York	
B.S. 1936, Mississippi State College for Women		Sampla, Ramona	Va.
Saffitz, Abraham Alan	N.Y.	Sampson, Courtney Howard	D.C.
A.B. 1936, Cornell University		Sanson, Chester Page	Okla.
Sager, Gene Gustav	D.C.	Sanson, Vernon Harold	Nebr.
Sager, John Harmer	D.C.	Samuels, Joseph Paul	W.Va.
A.B. 1947, Princeton University		B.S. 1949, West Virginia University	
Sager, Oscar S.	Conn.	Samuelson, Frederick Clarence	Ill.
A.B. 1940, New York University		Samuelson, Kenneth Robert	Ill.
Sager, Stanley Melvin	D.C.	Sandborn, Robert Lewis	Md.
A.B. 1949, Duke University		Sanchez, Ben P.	N.M.
Sagene, Thelma Yates	D.C.	Sanchez, Burdette Boardman	Pa.
Ed B. 1940, Danbury State Teachers College		Sanchez, Gloria Marie	D.C.
Saginor, Irving	N.Y.	Sanchez, Patricia H.	Va.
Sagle, Robert Franklin	Md.	Sanchez, Zulma Maria	Puerto Rico
Sagner, Charles Edward, Jr.	D.C.	Sand, David	Tenn.
A.B. 1947, University of California		B.S. 1949, East Tennessee State College	
Sain, Joseph Al	Md.	Sanders, Charles Edward	Va.
Sahn, Henry Spencer	Md.	Sander, Dora	D.C.
B.S. 1941, Telah University		A.B. 1942, Radcliffe College	
Sailer, Jessie Bradbury	Va.	Sanders, Bertram Webb	Ind.
A.B. 1939, A.M. 1940, University of Kansas		A.B. 1949, Fairham College	
St. Clair, John Gilbert	Va.	Sanders, Donald Earl	Va.
St. George, Erma Hoover	D.C.	Sanders, Frank Powell	N.C.
St. John, Charles Richard	Ohio	Sanders, George Clay	Va.
A.B. 1948, University of Akron		Sanders, John Albert	Pa.
St. John, Jack Visscher	Md.	A.B. 1948, The George Washington University	
St. Thomas, Dorothy Laird	D.C.	Sanders, Kendall Earle, Jr.	Va.
Salai, H. Hoshi	Hawaii	Sanders, Lee Steele	D.C.
Salazar, Henry Joseph	Md.	Sanders, Leslie Elwood	D.C.
Salazar, Ilija	D.C.	A.B. 1949, Franklin College of Indiana	
Salas, Joseph Mitchell	Va.	Sanders, Ralph Hyran	Md.
B.S. 1941, Oklahoma Agricultural and Mechanical College		Sanders, Robert Alexander	Va.
Salas, Yolanda Theresa	N.Y.	B.S. 1947, Cumberland University	
A.B. 1949, Marymount College		B.S. 1949, California Institute of Technology	
Salisbury, Donald	Va.	Sanders, William Gerard	Va.
Salikowski, Albert Stephen	Md.	Sandford, George William	D.C.
Saliday, David Eugene	D.C.	Sandler, Henry Minton	Pa.
Salas, Gustav Adolph	D.C.	Sandmeier, Melvin Wesley, Jr.	D.C.
Salmon, Albert James	D.C.	Sands, Courtland William	D.C.
Salmon, Ralph Franklin	Pa.	Sands, Lillie Peterson	Va.
Salinas, Asiele Bernadette	Pa.	Sands, Margaret Kinnaid	D.C.
Salter, Elliot Arnold	R.I.	A.B. 1949, Mount Holyoke College	
B.S. 1945, Brown University		Sandwich, Luther Martin, Jr.	D.C.
Salter, Lucille Fay	Va.	Sandwich, Marilyn Jane	D.C.
Salz, Ethel Jean	Md.	Sanford, Edith Smith	Va.
Salzberger, Lester Duane	Md.	B.S. 1947, State Teachers College, Farmville	
A.B. 1949, Western Maryland College		Sanford, Elizabeth Koonitz	Mass.
Salvati, Saverio Ralph	Ten.	A.B. 1931, Wellesley College	
Salvato, Ben Francis	N.Y.	B.S.E. 1945, Massachusetts State Teachers College, Framingham	
B.S. 1948, University of Texas		Sanger, Raymond Frederick	Va.
B.E.E. 1949, The George Washington University		B.S. in Ed. 1940, Pennsylvania State Teachers College, Bloomsburg	
Salzberg, Lorraine Muriel	N.Y.		

Sanshuk, Daniel B.S. 1946, M.S. 1947, Ohio State University	Md.	Saylor, Mary Louise B.S. 1936, University of Illinois	Ill.
Sansom, Lavane Earl A.B. 1947, University of California	R.I.	Saylor, Henry Clay B.S. 1949, University of Maryland	D.C. Pa.
Santambrosio, Gloria Joan	D.C.	Saylor, James Burton A.B. 1949, The George Washington University	D.C. D.C.
Sappenheld, Keith Mynes	Ind.	Saylor, James Willis Sayre, Robert Marion	Over.
Sarasohn, Vida B.S. 1949, Colleges of the Seneca	Va.	Sayre, Robert Marion A.B. 1949, Willamette University	N.Y.
Sargent, Joseph	D.C.	Seafish, Alfred	Va.
Santiago, Andie	D.C.	Seafie, William McCaslan, Jr.	D.C.
Sarkisato, Ida Marie	Va.	Seale, Nicole Vincent	Va.
Sarkisam, Leo	Va.	Sealise, Frances Mary	La.
Sarle, Charles Richard	D.C.	Seaulan, Sidney Joseph	Md.
Sarosi, Oliver B.C.S. 1920, New York University Ph.D. 1936, Royal Hungarian University		Seaulan, Thomas Russel A.B. 1949, The George Washington University	N.Y. Md.
Sarris, Louis George A.B. 1949, West Virginia University	W.Va.	Seaulon, John Edward	
Sartor, John Douglas, Jr.	S.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sartor, Mary Carruth	Calif.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sasaki, Robert Takashi	N.J.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saslaw, David	Pa.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sass, Tauba H. A.B. 1944, A.M. 1947, University of Pennsylvania		Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sato, Edward Hifumi	Hawaii	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Satten, Bernard Abraham	N.Y.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sauber, Frank	D.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sauer, Elizabeth	Ill.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sauer, Ruth Gladys B.F.A. 1948, Ohio University	Md.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saul, Howell Jay	N.Y.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saul, Norma Helen	D.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sauls, John Clinton	Ga.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saunders, Charles Turner	D.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saunders, George Everett	Va.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saunders, George William B.S. 1948, Wilson Teachers College	D.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saunders, Margaret	Va.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saunders, Michael Lee	D.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saunders, Nancy Nell	Va.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saunders, Patricia Anne	Va.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saunders, Sidney	N.J.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Savage, Edward Francis B.S. 1949, Georgetown University	Va.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Savcent, Anna Belle	Ga.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Savage, Carl Preston, Jr. A.B. 1948, University of Georgia		Seabornough, James K. A.B. 1949, The George Washington University	Va.
Savage, Howard Lane, Jr. A.B. 1948, Vanderbilt University	Tenn.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Savage, Julian	D.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Savage, Walter Benedict	N.I.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Savinese, Charles Joseph, Jr. A.B. 1941, University of North Carolina	D.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saverance, Carolyn McNair A.B. 1941, Wadsworth College	S.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saville, John William	Md.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sawyer, Francis David	N.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sawyer, John William B.S. in E.E. 1941, University of North Carolina B.S. in M.E. 1938, Ohio State University	Ohio N.Y.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sawyer, Mary Ann	S.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sawyer, Patricia Frances	D.C.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saxe, Charles Lee, Jr.	Md.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saxe, Lillian Mitchell	Va.	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Saxon, George Edward	Ohio	Seabornough, James K. A.B. 1949, The George Washington University	Va.
Sayers, William Walter	N.Y.	Seabornough, James K. A.B. 1949, The George Washington University	Va.

Schell, Emil D. A.B. 1935, Hiram College A.M. 1941, Western Reserve University		Va.	Schmidt, Arthur Walter B.S. 1948, Webb Institute of Naval Architecture	N.Y.
Schellenberg, Paul Herbert		Va.	Schmidt, Charles	Va.
Schellinger, Marjorie	N.Y.		Schmidt, Christian Joseph B.S. 1947, Rutgers University	Va.
Schellane, Ole Christen B.E. 1949, Wisconsin State Teachers College, Stevens Point	D.C.		Schmidt, Donald Gerry B.S. 1947, University of Washington	Mont.
Scheltens, Johannes Lorenzo		Md.	Schmidt, Dorothy Augusta	Md.
Scheltens, Rudolf Seifried		Md.	Schmidt, Richard Frederick	D.C.
Scheltens, Walter Roland		Md.	Schmidt, Sheldon Severin A.B. 1941, University of Wisconsin	D.C.
Schenck, Barbara		Mo.	Schmidt, William Edward	Md.
Schenck, Joseph Samuel	N.C.		Schmidt, William Francis B.S. 1941, The George Washington University	N.Y.
Scherback, William John B.S. in E.E. 1946, University of Wisconsin	N.J.		Schmidt, William Sheppard A.B. 1949, Franklin and Marshall College	N.Y.
Scherer, John		Va.	Schmitt, Hilda Frieda	Md.
Scherer, John Jacob III		Va.	Schmitt, George Christopher	Neb.
Schoeff, Roger Alan	D.C.		Schmitt, Paige Madison B.M.E. 1949, The George Washington University	Md.
Schermethorn, Lloyd Andrew A.B. 1941, University of Rochester A.M. 1947, Clark University	D.C.		Schmitt, Samuel Arthur B.S. 1947, University of Chicago	Ill.
Scheuch, Walter Daniel, Jr. B.S. 1948, University of Maryland		Md.	Schmitz, Carl Leo	Va.
Schwartzenberg, Hugo Angelo	D.C.		Schnapp, Carl Bernard	N.Y.
Schuck, Ivan Henry		Pa.	Schneberg, Rosalyn A.B. 1949, The George Washington University	D.C.
Schudel, Robert William B.S. 1949, University of Maryland	Md.		Schneble, Helen Mary B.S. 1949, Syracuse University	N.Y.
Schuff, Irwin B.M.E. 1949, New York University	N.Y.		Schneider, David Taylor A.B. 1947, Yale University	Mass.
Schuffman, Harold			Schneider, Edwin Roy A.B. 1948, University of Michigan	Mich.
Schuffner, William	Mass.		Schneider, Ella Kathryn A.B. 1949, The George Washington University	Colo.
Schukewitz, Norman Galt	N.Y.		Schneider, Joan Kathryn Schneider, Louis	D.C.
Schuller, Alvin	D.C.		Schneider, Thomas Frank	N.Y.
Schuller, David Mulford B.S. in E.E. 1948, Carnegie Institute of Technology	Va.		Schneider, Walter Henry B.S. 1941, Virginia Polytechnic Institute	D.C.
Schummel, Ruth Sonja B.S. 1947, University of Richmond	Pa.		Schneider, William Schneider, Joseph Matthew	N.Y.
Schandler, Walter Gabriel B.S. 1941, United States Naval Academy	D.C.		Schneid, William Conrad A.B. 1947, The George Washington University	D.C.
Schneider, William Rhyner	Wis.		Schneidier, Catherine Regina	D.C.
Schuck, Harry Charles B.S. in C.E. 1942, Carnegie Institute of Technology	Md.		Schneidman, Edward Perry A.B. 1948, The George Washington University	D.C.
Schmer, Edward Henry			Schneider, Charles Lewis	Md.
Schmuck, Herman	Va.		Schoen, David	N.J.
Schmuck, Leon Joseph	D.C.		Schoen, Robert Joseph	N.J.
Schmuck, Walter Frederick B.S. 1949, United States Naval Academy	D.C.		Schoen, Stephen Michael A.B. 1941, Harvard University	Va.
Schlepper, Gerald George	N.J.		Schoeneman, Robert Lee A.M. 1947, University of Maryland	D.C.
Schleiman, Morris	Ill.		Schoenfeld, John Shon Reed A.B. 1947, Washington and Lee University	D.C.
Schlemer, Nancy Early	N.Y.			
Schlemer, Todd Edward	D.C.			
Schlesinger, Roy Ramon, Jr.	D.C.			
Schlesinger, Daniel	D.C.			
Schlesinger, Jean	N.Y.			
Schlesinger, Joan	D.C.			
Schlesinger, Martin Sheldon	N.J.			
Schlesinger, Willis John	N.J.			
Schlop, Lester Alexander, Jr.	Neb.			
Schultz, Robert Edward B.S. 1948, Lehigh University	D.C.			
Schmalzer, Henry Walter B.S. 1947, Lebanon Valley College	D.C.			
Schmertz, Robert Colgan, Jr. B.S. in E.E. 1943, Princeton University	Pa.			
Schmid, Paul Emil, Jr.	Pa.			
	D.C.			

Schofield, Herbert Mellor	Conn.	Schultz, John Hooker	Md.
Schofield, Jack Hughey	W. Va.	LL B. 1940, The George Washington University	Md.
Schofield, James Hamlin	Ill.	Schultz, Paul Gibbons	
B.S. 1943, United States Military Academy		B.S. 1938, United States Naval Academy	
Scholl, George Stephens	N.C.	M.S. 1941, Massachusetts Institute of Technology	D.C.
B.S. 1948, University of North Carolina		Schultz, Theodore Arthur	Pa.
Scholtz, Edward Karl	Md.	B.S. 1948, Capital University	D.C.
Schommer, Richard Bennett	Md.	Schultz, William Harrison	D.C.
Schonberg, David	Md.	Schulz, William Hochstein	D.C.
B.S. 1940, Brooklyn College		Schuman, Joseph Morton	NY
Schonberger, Eugene	Va.	Schuman, Larry	Pa.
Schoenhardt, Donna Marie	Va.	Schumann, John Charles	D.C.
Schoenfeld, Nellie Louise	W. Va.	Schupp, Eric Adolph	D.C.
Schoonmaker, Eugene Vrooman	Md.	Schupp, Louis Albert	D.C.
Schoonover, Jobe Edward	Va.	Schurter, Maxine Ann	
Schraitle, Arthur William	D.C.	A.B. 1944, Pomona College	D.C.
Schram, Dorothy Jean	Mich.	Schussler, John D.	
Schreiber, Sam Michael	D.C.	B.S. 1940, Gettysburg College	Va.
Schreibman, Vigdon	N.J.	Schuxler, Shirley	D.C.
Schreiner, Margaret Abramitis	D.C.	Schuxler, William Joseph	
Schrenk, William J.	D.C.	A.B. 1940, Trinity College, Conn.	Va.
B.S. 1944, Case Institute of Technology		Schwaderer, George Jacob	Md.
Schreyer, Charles Henry	D.C.	Schwarm, James Stark, Jr.	Iowa
Schreyer, Stafford David	N.Y.	Schwartz, Wilford Rudolf	D.C.
B.E.E. 1948, Polytechnic Institute of Brooklyn		Schwartz, Bella	
Schrier, C. Esther	N.Y.	A.B. 1944, The George Washington University	D.C.
Schrier, Edward	D.C.	Schwartz, Della K.	D.C.
B.S. 1940, University of Maryland		Schwartz, Harryette	D.C.
Schroeder, Donald Elliot	Va.	Schwartz, Helen Janet	
Schroeder, Andrew Jackson	D.C.	A.B. 1948, The George Washington University	D.C.
Schroeder, Frederick John, Jr.	Pa.	Schwartz, Herbert	N.Y.
B.S. 1948, United States Naval Academy		Schwartz, Julius Louis	Md.
M.B.A. 1949, Harvard University		A.B. 1947, New York University	N.Y.
Schroeder, Le Moyne Allen	Neb.	Schwartz, Marjorie	
Schroeder, Leo William	D.C.	Schwartz, Milton Allan	N.I.
Schroeder, Margaret Flynn	D.C.	B.S. 1938, College of the City of New York	D.C.
Schroer, Marjorie Ann	Md.	Schwartz, Norman	Md.
Schumpf, Jeanne Marie		Schwartz, Robert Charles	D.C.
B.S. 1947, Pennsylvania State College		Schwartz, Simon	D.C.
Schupp, Dana Orlando	Mont.	Schwartz, Stuart Irwin	
B.S. 1948, Montana State College		Schwartzbach, Saul Marvin	
Schubert, Corahe Williams	Kans.	A.B. 1949, The George Washington University	D.C.
A.B. 1945, Bixler University		Schwartzman, Marcel	Va.
A.M. in Ed. 1948, The George Washington University		Schwartz, Albert Paul	Me.
Schuetzler, Randolph George	D.C.	Schwartz, Frederick Charles	Md.
Schumann, William Carter	D.C.	Schwartz, Harry Emanuel	Va.
A.B. 1949, Pomona College		Schweiger, Irving	
Schuler, Harland Arton	Va.	A.B. 1940, College of the City of New York	Va.
B.S. 1948, Georgetown University		Schweiger, Rave Rosenheck	N.Y.
Schulke, Ruth Dillon	Va.	Schweiger, Raymond Morris	Ill.
A.B. 1941, University of North Carolina		Schwenthal, Robert John	D.C.
Schulman, Abe	D.C.	B.S. 1948, Loyola College	D.C.
Schulman, Albert Avrum	D.C.	Schweitz, Edwin Paul	Va.
A.B. 1940, A.M. 1940, University of Chicago		Schweizer, Alfred Joseph	Va.
Schulman, Delores Hilda	D.C.	Schwichtenberg, Alan Edward	Va.
Schulman, Sidney	Va.	Schwichtenberg, Anna Lou	W.Va.
A.B. 1940, College of the City of New York		Schwier, Orville Roy	
Schulten, Carl Lang	D.C.	Schwinn, Mack Eugene, Jr.	D.C.
Schulteis, Elizabeth Lowe	Va.	A.B. 1948, West Virginia University	D.C.
B.L. Arch. 1921, Cornell University		Suscent, Valerie Germaine	D.C.
Schultz, Dorothy Jones	D.C.	Sothers, Ruth McKelway	Va.
B.S. 1936, University of Maryland		Scullo, Elena Patricia	D.C.
Schultz, Herman David	N.Y.	Sedlitz, August U.	
		Seoggin, Ellen Cooney	

Scoggins, Charles Robert	Md.	Sebastian, Robert, Jr.	N.Y.
A.B. 1948, University of Maryland		Sebastian, Virginia Jean	Conn.
Scollon, Kenneth Maritz	D.C.	Seborer, Miriam Zetlin	D.C.
Scopellite, Frank	N.Y.	A.B. 1939, Hunter College	
Scopi, Rosemary Patricia	D.C.	A.M. 1940, Columbia University	
Scott, Albert Peter	Va.	Seckinger, Daniel Lemont, Jr.	D.C.
Scott, Alice Dorothy	N.Y.	Seckler, Sam	Md.
Scott, Daisy Loretta	W.Va.	B.M.E. 1941, College of the City	
Scott, Dorothy Belle	Pa.	of New York	
Scott, Folsom Miko	Okla.	Secrest, Edgar Lee, Jr.	Tex.
Scott, Frederick Lewis, Jr.	D.C.	B.S.C. 1941, University of Georgia	
B.S. 1949, Pennsylvania State		Secula, John David	Md.
Teachers College, West Chester		Sedlar, Mohammed	D.C.
Scott, George Edward	D.C.	Sedlavec, Emanuel Joseph	Md.
Scott, Gerald Leroi	Md.	A.B. 1949, The George Washington	
Scott, Grace Davis	W.Va.	University	
A.B. 1939, Glenville State College		Sedmak, Michael Edward	Pa.
A.M. 1946, Columbia University		A.B. 1949, Muhlenberg College	
Scott, Harold Everett	Va.	Seebold, Robert Elvin	D.C.
Scott, Howard Greer	Ill.	Seeds, Henry	D.C.
Scott, James Davis	Pa.	Seeger, Edward Gustave	Va.
A.B. 1947, Princeton University		Ph.B. 1942, University of Wisconsin	
Scott, James Jackson III	Va.	Seegrist, Donald Waste	D.C.
Scott, Joseph Lee	Ky.	Seehusen, Robert Frank	Tex.
Scott, Joseph Raymond, Jr.	Va.	Seeliger, Doris Lanell	Va.
Scott, Lou Collins	D.C.	Seizon, Robert Dorsey	D.C.
A.B. 1924, Duke University		Segal, Nina	D.C.
Scott, Loretta Eastman	Va.	Segal, Rena Breenblatt	D.C.
A.B. 1948, The George Washington		Sepanski, William Emory	D.C.
University		A.B. 1941, Wilson Teachers College	
Scott, Owen Woody	Va.	Sevars, John Clarence	Fla.
Scott, Richard Gordon	D.C.	Sesaul, Arthur Irving	N.Y.
Scott, Russell Bert	Pa.	Seibold, John Paul	D.C.
Scott, Walter Conrad	D.C.	Seidel, Arthur Harris	N.Y.
Scott, Walter Robert	D.C.	B.S. 1942, College of the City of	
B.S. 1941, Pennsylvania State		New York	
Teachers College, West Chester		A.M. 1941, University of Michigan	
A.M. 1948, Temple University		Seidel, Robert Joseph	Va.
Scott, Walter Theodore	Mass.	Senden, Herbert Robert	N.Y.
Scott, Wilbur Newton	D.C.	Seidenberg, Doris Louise	D.C.
A.B. 1942, West Liberty State College		Seidman, Milton	D.C.
Scrivener, James Milton	Va.	B.S. 1938, Johns Hopkins University	
Scruggs, Charles George	W.Va.	M.S. 1946, The George Washington	
A.B. 1949, The George Washington		University	
University		Sein, Maria Eugenia	D.C.
Scribner, William Joseph	D.C.	A.B. 1934, Wellesley College	
Seidl, Paul Arthur	D.C.	Seiple, Stanley Herkimer	Conn.
Seamooke, William Harvey, Jr.	D.C.	A.B. 1949, University of Connecticut	
Seadler, Stephen Edward	N.Y.	Seitz, William Elizabeth	Pa.
A.B. 1947, Columbia University		Sewell, William James	D.C.
Seal, Barbara Stewart	D.C.	Sekas, Nick John	D.C.
Seal, Frank Walker	Md.	Sekamura, Sugo Robert	Hawaii
Seal, Morgan Swaim	D.C.	Selander, Stanley Harold	D.C.
B.S. 1940, The George Washington		Selbee, Ruth June	Va.
University		Selbee, Thomas McClure	Va.
Seale, John Arthur	Tex.	Selbin, Joel	D.C.
A.B. 1941, The George Washington		Selken, Mary Ellen	Va.
University		Soley, Florence Leiken	Conn.
Sealock, Robert Winfield	Va.	Selzman, Ellen	D.C.
Seaman, Leslie Thomas	N.Y.	Selkowitz, Lawrence Emanuel	Md.
Seamst, Ruth Ellen	D.C.	Sellers, Campbell Carrington	Va.
Search, Cecile Flanke	D.C.	Sellers, Lucy Mariah	D.C.
Search, Harry Edwin	Pa.	Sellers, Patricia Anne	Pa.
Searle, Della L.	D.C.	Sella, Clara Louise	Fla.
Searle, Marvin Stuart	Va.	Selsky, Abe	D.C.
Sears, Charles William	Md.	Selzer, Orie	D.C.
Sears, Earle Vincent	D.C.	Semkow, George Edward	Pa.
Seay, Lillian Floyd	Tex.	Semons, Joan Frances	Md.
Seay, Charles Fillmore	Va.	Semple, Malcolm McEwen	Fla.
Seay, Elise	Va.	B.S. 1940, American University	
A.B. 1938, Agnes Scott College		Senchyna, Thomas Joseph	N.Y.
Seay, Ralph Matthew	Va.	Sensadiver, John Frederick	Va.
Sebastian, Elsie	Conn.	A.B. 1948, Bridgewater College	

Sendejo, Serapio L.	Tex.	Shannon, John Elmer, Jr.	Pa.
Sentt, Frank Joseph	Md.	B.S. 1948, Philadelphia College of	
Sentt, Oscar Leo	D.C.	Pharmacy and Science	Pa.
A.B. 1948, The George Washington		Shannon, Joseph James	Mass.
University		Shannon, Taina Helena	Mass.
Sentt, Otto Ernest	Iowa	Shapiro, John Joseph	
A.B. 1949, Wartburg College		B.S. 1949, The George Washington	
B.D. Wartburg Theological Seminary		University	D.C.
Servach, William Robert	Ill.	Shapiro, Alvin Nelson	
B.S. 1949, Wheaton College		B.S. 1949, Drexel Institute of	
Sengstack, George Fleming	D.C.	Technology	D.C.
Senn, Homer Alexander	D.C.	Shapiro, Annette Rena	D.C.
Sennello, Francis George, Jr.	N.Y.	Shapiro, Barbara Lee	D.C.
Sepa, Emma	N.Y.	Shapiro, Cynthia Ellen	N.Y.
Sera, Frederick	Md.	Shapiro, Daniel Murry	
Sergeant, Audrey Lou	D.C.	A.B. 1948, The George Washington	
Sergeant, Russell Lewis	D.C.	University	N.Y.
Serikawa, Fumio	Hawaii	Shapiro, David	N.Y.
B.S. 1948, University of Hawaii		Shapiro, Goodwin	D.C.
Servais, Raymond Alois	Wis.	Shapiro, Gustave	D.C.
Servino, Salvatore	Va.	Shapiro, Harry Alan	D.C.
Sextokas, John Michael	Pa.	Shapiro, Irving	N.Y.
Settle, Thomas Greenhow William	D.C.	Shapiro, Laura Leib	Md.
B.S. 1948, United States Naval		Shapiro, Louise	D.C.
Academy		Shapiro, Maurice	N.Y.
M.S. 1944, Harvard University		Shapiro, Max	D.C.
Severe, Doris Wilmar	Md.	Shapiro, Nelson Hirsch	
Severe, Fverette	Md.	B.E.E. 1948, Johns Hopkins University	D.C.
Severin, Marilyn June	D.C.	Shapiro, Paul	N.Y.
Sevier, James Henry	D.C.	Shapiro, Phyllis Rhoda	D.C.
A.B. 1941, Howard Payne College		Shapiro, Sandra Ruth	D.C.
Seward, Morton W.	Ill.	Shapiro, Stanley	Va.
A.B. 1949, The George Washington		Shapley, Charles Leland	D.C.
University		Shapley, Ellen	Pa.
Sexauer, Henry Frederick	Md.	Sharkey, James Francis	Mass.
Sexton, John Montgomery	Conn.	Sharkey, Rosemary Elizabeth	
Seybert, Harry David	D.C.	Sharp, Daniel DeWitt	
Seymour, John Aloysius	Md.	B.S. in E.E. 1939, Northeastern	
Shackelford, Covington	D.C.	University	Va.
Shackner, Arthur Arden	N.Y.	Sharp, Madeleine Holt	
Shaddix, William Newton	N.Y.	B.S. 1929, University of Illinois	Va.
Shade, Casper Henry	Pa.	Sharp, Venda Venell	Pa.
Shade, James Russell, Jr.	Va.	Sharpe, Henry Arnold	Md.
B.S. in Ed. 1940, Pennsylvania State		Sharpe, William Charles, Jr.	D.C.
Teachers College, Millersville		Sharples, Ruby Strickland	N.Y.
Shade, Lavern Paul	Md.	Shattuck, James Wilbur	Mass.
Shafer, Alice Janet	Iowa	Shattuck, Phyllis Eleanor	
Shafer, Fred James	Mo.	B.S. 1939, Simmons College	Va.
Shafer, Ralph Maurice	D.C.	Shaw, Andie Marie Pontonmier	Pa.
Shaffer, Earl Edward	W Va.	Shaw, Christopher Campbell	
Shah, Kantilal Tokershi	D.C.	Ph.D. 1924, Yale University	
B.S. 1930, George Peabody College		M.D. 1911, University of Maryland	D.C.
for Teachers		Shaw, Constance Eleanor	
Shakeri, Farrukh Sayer	India	A.B. 1940, Duke University	Md.
Shaller, Herman I.	N.Y.	Shaw, Daryl Winston	
A.B. 1941, Brooklyn College		B.S. 1911, Pennsylvania State Teachers	
Shalowitz, Ernest Maurice	D.C.	College, Mansfield	D.C.
Shamie, Emile Robert	N.Y.	Ed.M. 1936, Duke University	D.C.
Shamagian, Zivart	D.C.	Shaw, Dolores	N.Y.
Shamahan, Dennis Francis	Pa.	Shaw, Elizabeth	D.C.
A.B. 1948, Princeton University		Shaw, Irwin Vincent	
Shandlmer, Ernest William	Pa.	Shaw, Margaret Gadden	
Shane, Margaret Brinkerhoff	D.C.	A.B. 1936, Radcliffe College	Va.
A.B. 1948, The George Washington		A.M. 1940, Columbia University	Va.
University		Shaw, Richard Lawrence	
Shank, Joan Barry	D.C.	Shaw, Robert Harrison	
Shank, Robert Edgar	Md.	A.B. 1949, Carroll College, Wis.	Pa.
Shanklin, Emily Shacklett	Md.	A.M. 1941, University of Wisconsin	Pa.
Shanks, Oscar Eugene	Md.	Shaw, Russell Fitzwood	
Shanks, Samuel Lee, Jr.	D.C.	Shaw, William Frederick	N.Y.
Shannon, Albert L.	D.C.	A.B. 1940, University of Miami	Va.
		Shaw, William Miller	
		Shea, Catherine Virginia	

Shea, Colvin Carmine	Va.	Sherfy, Laurence Polkinhorn	Md.
Shea, Corinne Helen	D.C.	A.B. 1933, LL.B. 1936, A.M. 1947, The George Washington University	
Shea, Joseph Mitchell	N.J.	LL.M., 1937, Harvard University	
Shea, Robert Francis	Mass.	Sherfy, Raphael	Md.
Shea, Robert Taylor	Ill.	A.B. 1933, LL.B. 1936, LL.M. 1938, A.M. in Gov. 1941, The George Washington University	
Shear, Natoy Lee	Va.	LL.M. 1937, Harvard University	
Shearin, Forrest Greene, Jr.	Md.	Sherin, Wanda Connor	Md.
B.S. 1937, Wake Forest College	N.C.	Sheridan, Helen Mary	Pa.
Sheble, Walter Franklin	Pa.	B.S. in Ed. 1948, Pennsylvania State Teachers College, Lock Haven	
A.B. 1948, Princeton University		Sheridan, Philip Henry	D.C.
Sheehan, Edward Patrick	Va.	B.S. in L.L. 1944, Worcester Polytechnic Institute	
A.B. 1949, The George Washington University		Sheridan, Philip Ross	Pa.
Sheehan, William Francis	D.C.	A.B. 1947, The George Washington University	
Sheller, Alene	D.C.	Sherline, Leo Stanley	D.C.
Shenan, James Joseph	N.I.	Shennan, Albert Stanley	N.Y.
Shenkin, Jacob	D.C.	A.B. 1943, University of Rochester	
LL.B. 1949, The George Washington University		Sherman, Benjamin	N.Y.
Sheets, Carolyn Sloan	N.Y.	A.B. 1948, New York University	
A.B. 1947, Western College, Mass.		Sherman, Fred	Va.
Shets, Evelyn Snyder	D.C.	A.B. 1944, University of Oklahoma	
A.B. 1926, Cassin Newman College		Sherman, Louise Heuser	D.C.
B.S. 1929, University of Virginia	Mass.	Sherman, Robert Miller	Tex.
Shell, Irving		Sherman, Selvey	D.C.
A.B. 1948, The George Washington University		A.B. 1947, The George Washington University	
Sheffield, Noreen Leahy	D.C.	Sherman, Solomon, Gaston	D.C.
Sheffield, Angela Kirby, Jr.	Fla.	Sherman, Vincent Edwin	Md.
Shel, John Francis	D.C.	Sherman, William Robert	Ill.
Shel, Mary Elizabeth	N.Y.	B.S. 1946, University of Wisconsin	
Shellen, Aleta G.	Iowa	Shatt, Ann Edward	Fla.
Shelton, Donald Bruce	D.C.	Shattuck, Clayton A.	D.C.
Shelton, Aurelielle Maryann	Va.	Shetoff, James Edward	Va.
Shelton, George Walter	Va.	A.B. 1947, The George Washington University	
Shelley, Fernie Bower	Va.	Shettrill, Laverge Herman	Okla.
Shelley, Francis Joseph	Pa.	Shewey, Lucine Lorraine	D.C.
Shelley, Dorothy Lorette	N.I.	Shewey, Constance Surver	Va.
Shelley, George William	N.I.	Shewey, Herbert David	Mass.
Shelley, Josephine Bradford	Va.	Shewey, William Wilson	Va.
B.S. 1947, State Teachers College, Farmville		Shewey, Frederick	Va.
Shells, Ronald George	N.I.	Shewey, James Stock	Va.
Shelton, John Paul	Va.	A.B. 1947, The George Washington University	
Shelton, Mabel Frances	Va.	Shewey, Leo	N.I.
Shelton, Thomas Edwin	D.C.	Shetzel, Hattie Harlan	D.C.
Shenck, Joseph John	Mch.	Shetler, Thomas Joseph	Pa.
Shenck, Eleanore West	Turkey	B.S. 1946, University of Scranton	
A.B. 1947, The George Washington University		Shibles, Frances Wilhelm	Va.
Shenck, Norbert Alvin	Ill.	Shields, Benjamin Bayard	Fla.
Shenck, Robert Stanley	D.C.	Shields, Bert A.	N.Y.
Shenck, Hazel Gertrude	D.C.	Shields, Carrington	D.C.
Shenck, Charles Perry	D.C.	A.B. 1941, Randolph-Macon Woman's College	
A.B. 1947, The George Washington University		M.S. 1947, Columbia University	
Shelton, William Edward	Va.	Shields, Elsie Tracy	Md.
B.F.E. 1949, The George Washington University		Shields, Susan Brady	Md.
Shepherd, Dorothy Glennie	Va.	Shilling, Charlotte	Va.
Shepherd, Janet Nevin	Md.	Shim, Alvin Tong	Hawaii
Sheppard, Elizabeth Anne	D.C.	A.B. 1949, University of Hawaii	
Sheppard, William Jacob	Va.	Shimabukuro, Henry	Hawaii
Sherry, Phyllis	D.C.	Shimabukuro, Masachi	Hawaii
Sherard, Virginia Mae	Tex.	Shimberg, H. Lee	D.C.
Sherba, John	D.C.	A.B. 1949, College of William and Mary	
Sheretz, Paul Claiborne	D.C.	Shimkus, Daniel Francis	Mass.
B.S. in E.E. 1944, Duke University			
Shereshedsky, Ruth Miller	D.C.		
A.B. 1949, University of Chicago			

Shindell, Sidney	Conn.	Shore, Parkhurst Alan	Va.
B.S. 1944, Yale University		B.S. 1940, The George Washington University	
M.D. 1946, Long Island College of Medicine	D.C.	Shortino, Joseph Dominic	Pa.
Shine, Dorothy Helen		Shortlidge, Anne	N.H.
B.S. 1940, Bowling Green State University		A.B. 1941, Smith College	Md.
Shine, Howard Lawrence	D.C.	Shostack, Robert	
A.B. 1940, Bowling Green State University		A.B. 1937, The George Washington University	Mass.
Shingler, Julian James	Ga.	Shott, Kathleen Virginia	
B.S. in M.E. 1939, United States Coast Guard Academy		B.S. 1936, Massachusetts Institute of Technology	Va.
Shinler, William Geniston, Jr.	D.C.	Shotwell, Clark Harding	Ind.
A.B. 1940, University of Missouri		Shoup, Wilson Elmer	
Shinn, Charles Curtis	Md.	A.B. 1947, Pennsylvania University	Ky.
Shinn, Joseph Melville	W.Va.	Shouse, William James	Ind.
Shipe, Kenneth Ray	Md.	Shove, Lois Aileen	Pa.
Shipley, Charles Waldron	W.Va.	Shovlin, John J.	Pa.
A.B. 1942, Shepherd College		Shovlin, Joseph Charles	
Shipley, George Edward	D.C.	B.S. in P.E. 1939, Pennsylvania State Teachers College, East Stroudsburg	Md.
Shipley, John Bruce	W.Va.	Showalter, John Henry	Md.
A.B. 1940, Shepherd College		Showalter, Ruth Hassell	
Shipley, William Stanton	D.C.	B.S. 1939, Radford College	D.C.
Shipman, Harvey Andrew	Mass.	Showalter, William Price	Va.
Shipman, Karl Waldo		Showalter, Julian Mansour	Md.
Shipman, Patricia Ann	D.C.	Shreeve, Charles Alford, Jr.	
Shipp, Charles Kenneth	Va.	B.E. 1945, Johns Hopkins University	Va.
Shipp, Thomas Wooten	D.C.	M.S. 1943, University of Maryland	Va.
Shirley, William Cluff	D.C.	Shreve, Earl Randolph	Va.
Shirk, Gilbert LaRue	Pa.	Shreve, Judith Hull	Md.
Shirk, Grace Etta	D.C.	Shryock, Richard Fuller	
Shirk, Harold George	Md.	A.B. 1940, University of North Carolina	S.C.
Ph.D. 1938, University of Maryland		Shuford, McDonald Isbell	
Shirley, Fred William, Jr.	D.C.	B.S. 1937, Clemson Agricultural College	N.C.
A.B. 1940, The George Washington University		Shugar, Harold Bernard	
Shirley, Mary Frances	Miss.	A.B. 1946, University of South Carolina	Pa.
Shirley, Reginald Douglas	N.Y.	Shugart, Caroline Louise	
Shiser, David Hawley	Ark.	B.S. 1937, Pennsylvania State Teachers College, Shippensburg	W.Va.
Shivers, Rufus William	Tenn.	Shugart, Elizabeth Wise	
B.S. 1943, Mississippi State College		A.B. 1947, Ohio University	Tex.
Shkolnik, Leon Jerome	N.J.	Shugart, James Earl	
B.S. in M.E. 1948, Newark College of Engineering		A.B. 1948, The George Washington University	Md.
Shlanta, Michael P.	Pa.	Shultenberger, John Albert	D.C.
Shnider, Jack Carl	D.C.	Shulman, Fay Janice	Pa.
Shmittnikoff, Helen Aleona	N.Y.	Shultz, Anna Mary	
Shnitzer, Paul	N.J.	B.S. 1947, Pennsylvania State Teachers College, Mansfield	D.C.
A.B. 1948, Upsala College	Va.	Shultz, Meyer	
Shockey, Evelyn Louise		B.S. 1939, College of the City of New York	
B.S. 1936, University of Virginia	D.C.	A.M. 1941, Columbia University	Md.
Shockey, William Herbert		Shuman, Anne Marie	
Shoemaker, Francis Dodge	Md.	A.B. 1941, Connecticut College	Kent.
B.S. 1937, University of Maryland		Shuman, Harold Dean	W.Va.
Shoemaker, Harold Lloyd		Shumate, Martha Lee	Pa.
A.B. 1944, Berea College	Pa.	Shundich, Peter	Pa.
Shoemaker, Paul Robert	D.C.	Shurman, John Jack	Utah
Shoemaker, Philip Ward	Va.	Shurtleff, Miller Francis	D.C.
Shoemaker, Randall		Shuster, Alvin	Va.
Shoemaker, Robert Frank	D.C.	Shute, Kenneth Walter	
Shoemaker, William Robert	Ala.	A.B. 1948, The George Washington University	W.Va.
Shook, John Henry	Ga.	Shutkin, Joseph Jerome	
Shookman, Loyd Allen	Ind.	A.B. 1947, University of Wisconsin	Fla.
A.B. 1949, The George Washington University		Sibthorp, George	Md.
Shorb, Rudolph Earl	D.C.	Sieciak, Walter Stanley	
Shordiche, Ruth	N.J.		
Shore, Jacob	Ohio		
B.S. in M.E. 1946, Illinois Institute of Technology			

Students Registered

525

Sides, Jimmie Miller	D.C.	Simmons, James Quincy, Jr.	N.J.
Siddall, James Dudley	Mo.	B.S. 1938, Wake Forest College	
Sibert, Patricia Anne	Argentina	M.D. 1931, Medical College of the	
Siegel, Abraham	Calif.	State of South Carolina	
B.S. 1931, College of the City of		Simmons, Kemper	Va.
New York		A.B. 1938, Marietta College	
Siegel, Abraham Lazarus	N.Y.	Simmons, Joseph Chase	D.C.
B.S. 1939, College of the City of		Simmons, Richard Paul	Md.
New York		Simmons, Thomas Thompson	Va.
M.S. 1939, New York University		Simmons, Barbara Anne	D.C.
Siegel, Frieda	Va.	Simmons, Doris Mae	Va.
A.B. 1937, Hunter College		Simmons, Harry Arthur	D.C.
Siegel, Harry M.	D.C.	Simmons, John Raymond	Md.
Siegel, Julian Lee	Mo.	Simmons, Shirley Hazen	D.C.
Siegel, Ralph	N.Y.	Simon, Leonard	D.C.
A.B. 1938, University of Maryland		Simon, Philip David	D.C.
Siegel, Sidney Herbert	N.Y.	Simon, Philip James	Iowa
A.B. 1938, Brooklyn College		Simon, Samuel Louis	Mass.
A.M. 1939, New York University		Simons, Paula LeRoy	D.C.
Siegel, William Marvin	D.C.	Simons, Edward	Miss.
Seaford, Robert Ellwood	Ohio	Simons, Karl Ernest	Hawaii
Seidler, Judith Ellen	N.J.	A.B. 1938, University of California	
Seiner, Joan Edith	N.Y.	Simonsen, Lawrence Joseph	D.C.
Siekiewicz, Helen Madeline	Pa.	Simonsen, Donald Fletcher	Va.
A.B. 1937, University of Pennsylvania		Simonsen, Robert Irene	D.C.
Sifton, Paul Ginsburg	D.C.	B.S. in Ed. 1939, Kansas State	
Somers, Janice Muriel	D.C.	Teachers College, Emporia	
Sorett, Kathryn Jeanette	Ala.	M.S. 1937, Fort Hays Kansas State	
A.B. 1935, University of Alabama		College	
Slosky, Albert	D.C.	Simpson, Herman LeRoy	N.C.
Silbaugh, Richard Walter	Iowa	Simpson, I. Lupton	Va.
Silberman, Louis B.	Md.	B.S. 1935, Hampden-Sydney College	
B.S. 1937, College of the City of		Simpson, Jack Benson	Pa.
New York		A.B. 1937, Earlham College	
Sileo, Michael Anthony, Jr.	N.J.	Simpson, James William, Jr.	Va.
Silk, Harry	N.J.	Simpson, John W.	Pa.
B.S. 1931, Newark College of		A.B. 1933, University of Rochester	
Engineering		L.L.B. 1938, Harvard University	
M.S. 1931, The George Washington		Simpson, Joseph	Calif.
University		Simpson, Melvin William	Va.
Siltman, Barbara England	Va.	B.S. 1936, Juniata College	
Siltman, Julian Winthrop	Calif.	Simpson, Richard Douglas	D.C.
A.B. 1936, Stanford University		A.B. 1938, Westminster College, Pa.	Pa.
Silvine, Daniel Robert, Jr.	D.C.	Simpson, Robert Ellsworth	D.C.
Silva, Harold	Tenn.	Simpson, Roxie Callic	
Silver, Charles	N.J.	A.B. 1932, Meredith College	Md.
Silver, David Henry	N.Y.	Sims, Fred Armos	
Silver, Jack Samuel	D.C.	A.B. 1930, Henderson State Teachers	
Silverberg, Stanley Melvin	D.C.	College	
B.S. 1935, The George Washington		Sims, Judith Fisher	Wis.
University		Sinaver, Ernst Maxwell	N.Y.
Silverman, Aaron	D.C.	A.B. 1932, Cornell University	
A.B. 1937, The George Washington		Sinclair, John H.	D.C.
University		Sinclair, Sheila Ann	Va.
Silverman, Betty Zelma	D.C.	Sinclair, Janet Zelda	D.C.
Silverman, David	D.C.	Sing, George Jung	D.C.
Silverman, Florence Emmalee	D.C.	Sing, Joseph Lee	D.C.
Silverman, Lawrence	D.C.	Sing, Milton Lee	D.C.
Silverman, Marilyn Pearl	N.J.	Singel, Robert Duane	D.C.
B.S. 1938, University of Illinois		A.B. 1932, University of Wisconsin	
Silverman, Maurice Bernard	Conn.	Singer, Allan Milton	D.C.
Silverman, Norman	Md.	Singer, Elaine Betty	N.J.
Silvey, Irene E.	D.C.	Singer, Lawrence Robert	D.C.
A.B. 1926, University of Oregon		Singer, Mary Phyllis	D.C.
A.M. 1938, Ohio University		Singer, Robert Money	D.C.
Simmons, John William	Okla.	Singer, Stanley Levin	D.C.
Simmonds, Grant Dyer, Jr.	D.C.	Singer, Thomas Eric	Mass.
Simmons, Delford Edgar	Va.	Singhata, Robert Allison	D.C.
Simmons, Dorothy Jean	D.C.	Singleton, Ewell Sam	D.C.
Simmons, Earle Mitchell	Va.	Singleton, Julius Knox	D.C.
		A.B. 1931, Berea College	
		Singleton, Marjorie Christensen	D.C.
		B.S. 1941, University of Utah	

Singleton, Walter Ferguson	D.C.	Slaughenbaupt, Arnold Claude	Pa.
Sineman, David	N.Y.	B.S. in E.E. 1949, Pennsylvania State College	Me.
B.S. 1949, The George Washington University		Slaughter, Patricia Anne	D.C.
Sineman, Julian Howard	D.C.	Slavens, Dorothy Jean	D.C.
Sisk, Jane Lee	D.C.	Slavik, John Andrew	D.C.
B.S. 1947, State Teachers College, Farmville, Va.		Slavin, Joseph George	
Sinn, William Herman	Va.	A.B. 1949, The George Washington University	N.Y.
Sinnot, Robert Patrick	D.C.	Slavin, Leon Jacob	N.I.
Sipe, Sarah Milnes	Va.	Slawmer, Carl Weber, Jr.	
B.S. 1948, Madison College, Va.		B.S. 1948, Muhlenberg College	Tex.
Sirbaugh, Isaac William	Va.	Sugar, Mary Ray	
Sizuta, Helene Carole	D.C.	B.S. 1947, A.M. 1941, West Texas State Teachers College	Va.
Sizuta, Milton	N.Y.	Sligh, Frederick Henry	
Sizuta, Solomon	N.Y.	A.B. 1940, The George Washington University	Ill.
Sisk, Johanne Coffee	Ga.	Sloan, Richard	Me.
Siskind, Elton Irvin	Md.	Sloan, Sheila Mary	Me.
A.B. 1948, Johns Hopkins University		Sloane, Edward Frederick	D.C.
Sisselwine, Norman	Md.	Sloot, Halbert Myrland, Jr.	D.C.
B.S. 1948, New York University		Sloot, Jonathan Welsh	Mass.
Sitters, Edward Samuel	N.J.	Slomim, Arnold Robert	
Solomon, Lucille Edward	Pa.	B.S. 1947, Tufts College	
Sotter, Wilbur Stanley		A.M. 1948, Boston University	D.C.
B.S. 1948, Pennsylvania State College		Slotemaker de Brum, Jan Rudolph	D.C.
Sta, Glenn William	D.C.	Slotemaker de Brum, Maria Wilhelmina	Me.
Stern, Mary	D.C.	Slottower, Dorothy Mae	D.C.
Suzmore, Ernest Nolin	Va.	Slusher, Sarah Velma	Me.
Suzmore, Harry Daniel	Va.	Slv, Robert Dunham	Va.
A.B. 1949, College of William and Mary		Smagorinsky, Joseph	
Sjoberg, Edward Theodore	D.C.	B.S. 1947, M.S. 1948, New York University	Pa.
Skolok, Rose	N.Y.	Smale, Bernard Clair	
A.B. 1949, Hunter College		B.S. 1949, University of Pittsburgh	Pa.
B.S. 1949, Columbia University		Smale, Ronald Anthony	Cal.
Skelly, George Martin III	Md.	Smalhout, John James	D.C.
A.B. 1949, The George Washington University		Small, Grover Lee	
Skelly, John Thomas	Cuba	A.B. 1949, University of Maryland	N.Y.
Skellon, Julius Benjamin	D.C.	Small, Leonard	
Skellon, Robert T.	N.C.	A.B. 1949, The George Washington University	S.C.
Skilmore, Jack Hoover	Va.	Smart, Hazel Mildred	D.C.
Skilman, Douglas Benjamin		Smart, James Alexander	Me.
B.S. 1942, Pennsylvania State College		Smay, Charles Franklin, Jr.	Mass.
Skimmer, Henry Ross	Wyo.	Smeland, Ruth Jean	Pa.
B.S. 1947, University of Wyoming		Smellowsky, Stephen James	Conn.
Skinner, John Carol	D.C.	Smernoff, Stephen David	Mass.
Skinner, John William	Md.	Smerebski, Joseph Francis	
A.B. 1942, Wesleyan University		B.S. 1941, Boston College	D.C.
A.M. 1947, The George Washington University		Smiley, Warren Dandford	D.C.
Skinner, Leonard Morris	D.C.	Smith, Albert Benjamin	Pa.
B.S. in Ed. 1948, Northeast Missouri State Teachers College		Smith, Allen Harold	
Skinner, Minter Perry	W.Va.	A.B. 1949, Gettysburg College	Va.
A.B. 1927, Fairmont State College		Smith, Anne	Ga.
A.M. 1944, West Virginia University		Smith, Arthur Godfrey	Va.
Skinner, Paul Artemus	Mass.	Smith, Arthur Preston	D.C.
Skinner, William Waddell	D.C.	Smith, Arthur Robert, Jr.	
Skisot, Marvin Mayer	N.I.	B.S. 1939, Juniata College	Va.
Skispaard, Robert Ivar	D.C.	Smith, Audrey Diane	Me.
Skoba, Helysone Audrey	Conn.	Smith, Barbara Anne	Va.
Skora, Richard H.	D.C.	Smith, Benjamin Williams	
Skovira, John Joseph	Pa.	B.S. 1940, Virginia Polytechnic Institute	
Slack, William	N.J.	M.S. 1947, The George Washington University	D.C.
Slate, Virginia Brigham	Va.	Smith, Betty Jane	Tex.
B.S. in Ed. 1946, Boston University		Smith, Bonnie Dora	Va.
Slater, Ruth Janice	Conn.	Smith, Byron LaVelle	D.C.
Slattery, David Anthony	D.C.	Smith, Carolyn Mary	Va.
B.S. 1948, Georgetown University		Smith, Carter Lee	Okla.
Slattery, Frank J.	D.C.	Smith, Casper Hayden, Jr.	
Slattery, Richard Gates	Md.		
Slaugh, Donald Clarke	Va.		

Students Registered

527

Smith, Charles Earl	Mo.	Smith, Jack Albert	N.M.
Smith, Charles Hubert	Ga.	Smith, Jack Morgan, Jr.	Ga.
B.S. 1932, United States Naval Academy		A.B. 1948, Emory University	Ariz.
Smith, Charles Malloy	Md.	Smith, Jackson Wray	
Smith, Charles Nesbitt	D.C.	A.B. 1948, The George Washington University	Ga.
Smith, Charles William	N.Y.	Smith, James Edward	
Smith, Chester Horace	Nev.	B.S. 1954, United States Naval Academy	Va.
Smith, Clare Frances	D.C.	Smith, James Lerue	D.C.
A.B. 1941, Smith College		Smith, James Mitchell	D.C.
A.M. 1942, University of Pennsylvania		Smith, James Oscar	Va.
Smith, David Bushnell	D.C.	Smith, James Warren	Md.
Smith, Donald David	Md.	B.S. in Ed. 1941, A.M. 1949, University of Michigan	D.C.
Smith, Donna Louise	Va.	Smith, Jeanne Lucille	
Smith, Dorothy	D.C.	B.F.A. 1941, University of Illinois	D.C.
Smith, Dudley Burcham	Oreg.	Smith, Jennings Talbot	Md.
B.S. 1945, California Institute of Technology		Smith, Joan Marlowe	Mass.
Smith, Edward Anthony	D.C.	Smith, John Dwayne	N.Y.
Smith, Edward George	Va.	Smith, John Terrence	
Smith, Elbert Keener	Tex.	M.D. 1929, Columbia University	
Smith, Eleanor Lockery	D.C.	A.B. 1930, Dartmouth College	N.Y.
Smith, Elizabeth Popovich	Va.	Smith, Joseph Edward	D.C.
A.B. in Ed. 1941, Rhode Island College of Education		Smith, Josephine Lucille	
Smith, Emory Peter	D.C.	A.B. 1930, University of Buffalo	
Smith, Emory Clark	Tex.	A.M. 1941, The George Washington University	Va.
A.B. 1929, North Texas State Teachers College		Smith, Joyce Elizabeth	Va.
A.M. 1941, University of Texas		Smith, Kendall Owen	N.Y.
L.L.B. 1947, Southern Methodist University		Smith, Lawrence Crane	D.C.
Smith, Esther B.	Va.	Smith, Leon	
Smith, Fern Jones	Mo.	A.B. 1947, L.L.B. 1948, The George Washington University	Va.
Smith, Frances Caldwell	Va.	Smith, LeRoy Walter	
A.B. 1945, College of William and Mary		A.B. 1947, American University	Va.
Smith, Frances Dean	D.C.	Smith, Louis Gay, Jr.	Va.
Smith, Francis Murphy	D.C.	Smith, Luther Earl	D.C.
Smith, Frank White	Md.	Smith, Margaret Anne	Md.
Smith, Franklin Guest	D.C.	Smith, Margaret Isabel	Va.
B.S. 1943, United States Military Academy		Smith, Martin Timothy	N.C.
Smith, Frederick Holmes	W.Va.	Smith, Marvin Barrius, Jr.	Md.
A.B. 1941, West Virginia University		Smith, Marvin Duane	Iowa
L.L.B. 1949, Washington and Lee University		Smith, Mary Ann	Ga.
Smith, Frederick Lovick	D.C.	Smith, Mary Louise	
Smith, Frederick Newcomb	Ind.	B.S. 1926, University of Chicago	Md.
Smith, French Crawford	Md.	Smith, Mea Clyde	
Smith, George Francis	D.C.	A.B. 1917, University of Texas	N.C.
Smith, Gould Winfree	D.C.	A.B. 1917, University of North Carolina	
Smith, Gladys	Md.	Smith, Mildred Laetitia	Va.
Smith, Gowans	Va.	Smith, Muriel Alma	Ark.
A.B. 1927, Princeton University		Smith, Nancy Caroline	W.Va.
Smith, Grady Fay	Ohio	B.S. 1949, West Virginia Wesleyan College	
Smith, Harold	N.Y.	Smith, Natalie Harriet	N.Y.
Smith, Harold Calmes, Jr.	Md.	Smith, Nellie Jane	Md.
Smith, Harold Jerome	D.C.	A.B. 1947, Emmanuel Missionary College	
A.B. 1948, The George Washington University		Smith, Nicholas James	Va.
Smith, Hester Wallace, Jr.	Md.	Smith, Orval James	D.C.
Smith, Helen Page	Va.	A.B. 1947, University of Wyoming	
Smith, Herbert Willard	D.C.	Smith, Patrick Druey	D.C.
Smith, Hewlett	Ga.	Smith, Pearl O	Ind.
A.B. 1948, A.M. 1942, The George Washington University		Smith, Richard Henry	Va.
Smith, H. Johns Robert	Va.	Smith, Robert	N.Y.
B.S. 1942, Georgetown University		Smith, Robert Clyde	Ala.
Smith, Hugh Edward	N.Y.	A.B. 1941, University of Alabama	
B.C.E. 1947, Rensselaer Polytechnic Institute		Smith, Robert Dilman	Va.
Smith, J. Gordon	Md.	Smith, Robert Sams	Ill.

Smith, Robert Tynes III A.B. 1947, The George Washington University	Va.	Snodergrass, Ernest Walter A.B. 1932, Morris Harvey College A.M. 1948, West Virginia University	W.Va.
Smith, Roger Emerson	D.C.	Snodergrass, Paul David	Va.
Smith, Samuel Rodmond A.B. 1948, The George Washington University	Va.	Snodergrass, Stanley Benton	S.D.
Smith, Sheldon Keith	D.C.	Snodergrass, William David A.B. 1941, King College	Va.
Smith, Shirley E. B.S. 1948, The George Washington University	Mich.	Snodgrass, Ann Browning A.B. 1930, Smith College	D.C.
Smith, Stuart Stamp	D.C.	Snook, Katherine Cosandey	D.C.
Smith, Theodore Tristram	Va.	Snow, Edward Francis	Md.
Smith, Thomas Ierold	D.C.	Snow, Thomas Lawrence	N.Y.
Smith, Thomas Lewis	Md.	Snyder, Charles Joseph	D.C.
Smith, Thomas Warner A.B. 1948, The George Washington University	D.C.	Snyder, Donald Kenneth A.B. 1949, The George Washington University	N.J.
Smith, Tomas Arthur A.B. 1949, The George Washington University	Md.	Snyder, Emma Frederick	Pa.
Smith, Truett Conwell	Fla.	Snyder, Esther Anne	W.Va.
Smith, Verna Emily	D.C.	Snyder, Frances	Md.
Smith, Violet Zenzler	Va.	Snyder, Gilbert Reed B.E.E. 1949, The George Washington University	D.C.
Smith, Walker William	N.C.		W.Va.
Smith, Wallace Morrell A.B. 1949, The George Washington University	Va.	Snyder, Glenn Orval	D.C.
Smith, Walter B.	Mass.	Snyder, Lucille	Pa.
Smith, Warren Webster	D.C.	Snyder, Mark Curtis	Va.
Smith, Willard Franklin	Va.	Snyder, Martha Frances A.B. 1945, LL.B. 1946, LL.M. 1947, The George Washington University	Pa.
Smith, William Christopher	D.C.	Snyder, William, Jr.	Wash.
Smith, William George B.S., M.D. 1947, University of Chicago	Ill.	Sobech, Frank Joseph B.S. 1949, Seattle University	D.C.
Smith, William Jerome	Md.	Sobolewski, Erma May A.B. 1948, Missouri Valley College	D.C.
Smith, William Milton	Miss.	Socular, Marilyn A.B. 1949, University of Maryland	D.C.
Smith, William Nesbit B.S. 1944, Bucknell University	D.C.	Sodd, Mary Ann	Ill.
Smith, William Parkhurst, Jr.	D.C.	Sohl, Walter Wood, Jr. A.B. 1939, DePauw University A.M. 1940, Georgetown University	N.Y.
Smiley, Frances Megan A.B. 1941, University of Chicago	Ill.	Sokolowsky, William	France
Smiley, Linnal Dale	Calif.	Sohl, Jean Louis	D.C.
Smithson, Clyde Elmer	D.C.	Sollberg, Marian Ruth	D.C.
Smook, Esthace Rogers	N.C.	Solis, Arnold	D.C.
Smookler, Melvin Irving	D.C.	Solis, Marin Saldana	D.C.
Smullen, Gloria Tomkins	D.C.	Sollins, Nancy Thurber A.B. 1946, The George Washington University	D.C.
Smullen, Joseph Sidney A.B. 1946, University of California at Los Angeles	D.C.		Pa.
LL.B. 1949, The George Washington University		Sollitt, William	N.Y.
Smookler, Morton Bernard	Del.	Solomon, Edward, Jr. A.B. 1949, Pennsylvania State College	D.C.
Smoot, Henry Brawner	Va.	Solomon, Lewis Jay	D.C.
Smoot, Hope Marie B.S. 1948, Harvard University	N.Y.	Solomon, Nona Lee	Ohio
Smoot, Jeannette Irving	Pa.	Solomonson, Carl Edward	Md.
Smullen, Isabelle Anna B.S. 1947, Temple University	D.C.	Solow, Max B.E.E. 1943, The George Washington University	Md.
Smuszynski, Alvin Walter	Mich.		
Snackenberg, Joan	D.C.	Solt, James Earl A.B. 1944, University of Maryland A.M. 1949, Columbia University	W.Va.
Snare, Clayton Leon	Mo.	Solter, Myron Woodruff	Ohio
Snatager, Leonie A.M. 1940, Amsterdam University	D.C.	Solton, William Donald, Jr. B.M.E. 1948, Rensselaer Polytechnic Institute	Va.
Sneddon, John James	Va.	Somers, George Britton A.B. 1949, University of Richmond	Va.
Snell, Henry Ambrose, Jr. B.S. 1943, University of Maine	D.C.	Somers, John Charles	N.Y.
Snell, Roy Edward	D.C.	Somers, Nelson Roy	Va.
Snellman, William Cornelius	Pa.	Somerville, Atwell Caden	N.Y.
Snyder, Frankie Louisa	Ohio	Sommerfeld, Stanley Lyman A.B. 1940, LL.B. 1942, Syracuse University	
Snyder, Edmund Alfred B.S. 1948, The George Washington University	Va.		

Sonday, Francis Idewellyn	Ind.	Spaulding, John Henry	D.C.
AB 1928, Indiana University		AB 1949, The George Washington University	
Sonnabend, Joel Simon	N.J.	Spaven, Margaret Napier	Va.
Sonnaberg, Herbert Jerome	Md.	Speaks, James Taylor	Md.
Sonnet, George M.	Pa.	Spear, Harvey Milton	Md.
Sonner, Genevieve Lois	La.	AB 1947, Brown University	
Soo, Raymond	D.C.	LL.B. 1948, Harvard University	
B.S. 1948, University of Maryland		Speat, Marion Alice	Va.
Sorell, Gerald Paul	N.Y.	Speat, William W.	Va.
Sorensen, Margaret Elizabeth	D.C.	AB 1944, University of Nebraska	
Sorensen, Barbara Jeanne	N.Y.	LL.B. 1946, The George Washington University	
Sorensen, Clara Theoma	Iowa	Speatin, Herbert Prescott	Wash.
Sorensen, Edwin Denison	Ohio	Speatmak, Pearl	Pa.
AB 1947, Denison University		Spears, Polly Robin	Va.
Sorenson, Marian Ruth	Iowa	Specht, Norman Eugene	D.C.
Sorge, William Friedrich	Wis.	Spector, Eugene Paul	
Soroka, Mary Olga	D.C.	AB 1947, The George Washington University	
B.S. 1926, Massachusetts Institute of Technology		Spester, George	N.Y.
Soroka, Seymour Philip	N.J.	B.C.E. 1942, M.C.E. 1947, Polytechnic Institute of Brooklyn	
Sorrell, Frederick Maurice	Va.	Spektor, Sharon Madeline	D.C.
Sorrell, Ida Davis	Va.	Spektor, William Samuel	Wis.
AB 1949, The George Washington University		Spaulster, Robert Anthony	D.C.
Sorrell, Richard Alexander	Md.	Spick, A. W. Valiant	Va.
Sorrels, Alta Gertrude	Ill.	Spier, William Thomas, Jr.	D.C.
Sorrels, John Robert	Md.	Speivack, Harold Lynn	Ohio
Sorria, Louis Robert	N.Y.	B.S. 1942, Ohio University	
AB 1949, The George Washington University		Spiegel, Frances Winifred	D.C.
Sorra, Robert Eugene	D.C.	Spiegel, Rodney Christopher	D.C.
Sorock, Frank James	Va.	Speight, Frank Young	Md.
B.E.T. 1948, The George Washington University		B.S.C.E. 1948, Alabama Polytechnic Institute	
Souk, D. Gerald Charles	D.C.	Spellman, Ruth Ann	Mass.
Soukiet, Arthur Fuller	Va.	B.S. 1949, College of Our Lady of the Elms	
Soukier, Richard Sterling	Md.	Spence, Charles E., Jr.	Idaho
Southerland, Elizabeth Larkin	Va.	Spence, John Sherman, Jr.	Ohio
AB 1946, University of Georgia		Spencer, Carl Alfred	
Southwell, Paul M.	Va.	B.S. in Ed. 1944, Miami University	D.C.
AB 1940, The George Washington University		Spencer, Carmen Delano	Va.
Sowards, Leona Noel	D.C.	Spencer, Charles Flavins	
AB 1947, Municipal University of Wichita		AB 1944, University of North Carolina	
Sowards, Maxine Exer	D.C.	Spencer, Donald Braden	Md.
Sowell, John Broadus	D.C.	Spencer, Dorothy Jane	Md.
B.M.E. 1947, Georgia Institute of Technology		Spenser, George Browning	D.C.
Sowers, Mary O.	Va.	Spenser, John W. H.	Va.
Sowers, Robert Hauer	D.C.	B.S. 1948, The George Washington University	
Spadafino, Carmale	N.Y.	Spencer, Mary Anderson	Va.
Spaul, Giles Henry	W.Va.	Spencer, Ray	D.C.
Spaul, Hilary David	D.C.	Spencer, Robert Mitchell	Va.
Spain, Norman Noah	N.Y.	AB 1940, The George Washington University	
AB 1946, Brooklyn College		Spencer, Thelma Lois	Md.
Spanje, Clarence Wilbur	Pa.	Spencer, Thomas Marshall	D.C.
B.E. 1948, Yale University		Spenser, Edith Moffat	Md.
Spangler, Leonard William	Va.	Spesopulos, James George	D.C.
Sparks, George Klepfer	D.C.	Sperry, Irwin Lloyd, Jr.	D.C.
Sparks, Charles Joseph	Md.	Spessard, Callahan Michael, Jr.	Va.
B.S. 1949, Cornell University		Spiegel, Samuel	Calif.
Sparks, Donald Carroll	D.C.	Spiegler, Robert Lee	N.Y.
Sparks, Edward Dean	Colo.	Spielman, Edward Thomas	Oreg.
B.S. 1946, University of Oklahoma		Spielman, Milton Roy	Ohio
Sparks, Lemuel Columbus, Jr.	Md.	B.S. 1944, Case Institute of Technology	
AB 1940, Roanoke College		Spiker, Donald Axe	D.C.
B.D. 1943, Lutheran Theological Seminary, S.C.		Spiliotis, Niki	D.C.
Sparks, Morris Murray	N.Y.		
Sparz, Murray	N.Y.		
Spaulding, Jo Anne	D.C.		

Spilbury, Calvin C. A.B. 1942, The George Washington University	Utah	Stallings, James Henry, Jr. A.B. 1948, Duke University	D.C.
Spinner, Donald Burke	D.C.	Stallsmith, William Paul, Jr.	Md.
Spinner, Jack Robert	Ill.	Stambauch, George Leonard	Pa.
Sprides, James Dennis A.B. 1940, The George Washington University	Fla.	Stambler, Howard Victor	D.C.
Spiro, Jacqueline	D.C.	Stamey, Harry Clay A.B. 1949, The George Washington University	Pa.
Sputler, Robert Henry	N.Y.	Stamper, Charles William	D.C.
Spivey, Mattie Rae B.S. 1943, Texas State College for Women	Tex.	Starnell, Carl Burton, Jr.	N.Y.
M.S. 1947, Iowa State College of Agriculture and Mechanic Arts		Stander, Maxwell B.S. 1942, College of the City of New York	Ohio
Spivey, Thomas Denmuth A.B. 1940, University of North Carolina	Va.	Stanfield, Florence Virgene	D.C.
Spoden, Florian George, Jr. B.S. 1943, University of Michigan	Va.	Stanisavljevich, Nikola Dragisha	Md.
Sponheim, Carol Elaine	Minn.	Stanislawewicz, Joseph Michael	D.C.
Spoonamore, Edward Bruce, Jr.	Kans.	Stankoff, Ralph Michael	Ohio
Sprigewell, Phillip Temolei	Oreg.	Stanley, C. Willard	
Sprunger, Curtis Howe A.B. 1949, University of Alabama	Ala.	Stanley, Earl R. B.S. 1943, Kent State University	
Sprunger, Paul Frederick A.B. 1947, University of Illinois	Md.	L.I.B. 1949, The George Washington University	D.C.
M.S. 1948, University of Wisconsin		Stanley, Eric	N.Y.
Sprint, James Ashby	Va.	Stanley, Gregory Quin	D.C.
Spruwell, Loretta Charles	Wyo.	Stanley, Ruth Burnham	D.C.
Spruwell, Robert Roy A.B. 1948, University of Denver	Wyo.	Stanley, Snowden	Md.
Spruce, Frances		Stanners, Thomas Michael	Va.
Spruener, Frederick F.	Md.	Stansbury, James William	Va.
Spruce, Doris Clara	Ind.	Stansbury, Ralph Emory	Wash.
Spruick, Clifton O'Brien	Mo.	Stanfield, James Arthur B.S. 1949, State College of Washington	Pa.
Spruick, Gene Paul	Va.	Stanton, John Francis	R.I.
Spruick, Roy Taylor	Ky.	Stapleford, LeRoy Brown	Va.
Spruill, Margaret Loretta	D.C.	Staples, Gladys R. B.S. 1944, Mary Washington College	D.C.
Squillaro, Nicholas	Va.	A.M. 1949, Columbia University	
Squire, William Harry	Pa.	Stark, John Regan A.B. 1948, Cornell University	Va.
Srensek, Stanley Edward	Pa.	M.P.A. 1947, New York University	N.Y.
Sroka, Sylvia Anita	Ohio	Stark, Lois Iva	Ind.
Sroka, Edward Andrew B.S. 1941, Purdue University	Md.	Stark, Morton S.	W.Va.
Sroka, Wanda I.	Va.	Stark, Norman Paul	
Stables, LeRoy C. A.B. 1948, Syracuse University	D.C.	Stark, Robert Lee A.B. 1949, Duke University	Md.
Stachniak, Gloria Patricia A.B. 1949, University of California	N.Y.	Starkey, Jesse Lee A.B. 1948, Western Maryland College	D.C.
Stachowick, Edward Joseph	Calif.	Starling, Lindsey	Va.
Stachura, Wendy Sue	Pa.	Starnes, Nancy Ely A.B. 1945, Bryn Mawr College	Ky.
Stacy, Charles Mack B.E.E. 1949, Georgia Institute of Technology	Va.	Starna, Henry Carroll	D.C.
Stacy, Emily Mildred	Ark.	Starr, Freda	D.C.
Stade, Margaret		Starr, David Whelpley	Pa.
Stadtmiller, Jack Edward	D.C.	Starr, Myron Mathon	N.Y.
Stadtmueller, Mary Elizabeth A.B. 1945, Cre College	Iowa	Starr, Samuel Charles	
Stafford, Bert Bedell A.B. 1947, University of Texas	Va.	Starr, Selie A.B. 1940, Brooklyn College	Va.
Stafford, Dorothy Craik	D.C.	Starr, Barbara Lee	D.C.
Stafford, Richard Lyman	Calif.	Startari, Joseph Vignale	N.Y.
Stage, Anson Hutchinson	Va.	Startup, Elizabeth Jean	Ky.
Stahl, Gerald M.	Va.	Startz, Raymond Francis	D.C.
Stahl, Robert William A.B. 1948, Gettysburg College	Va.	Stath, Manie	Pa.
Stainbrook, Norbert Elery	Pa.	States, Helen Anna	D.C.
Starr, Ralph Lavar	D.C.	Stauffer, Clyde Andrew, Jr.	
Stall, Ann Carole Page	Md.	Stauffer, George Lester A.B. 1940, College of William and Mary	Calif.
Stallings, Clyde Morton	N.C.	Stauffer, James Elwood A.B. 1940, Franklin and Marshall College	D.C.
		Stauffer, Jane Catherine B.S. in P.E. 1945, The George Washington University	

Staver, Evelyn Jane	Va.	Steiner, Archie Kenneth	Tenn.
Stanton, Ruth Downey	Va.	A.B. 1935, Lincoln Memorial University	
B.S. 1931, St. Marys College, Ind.			
Steel, George W.	Pa.	B.S. 1936, East Tennessee State College	
Steelman, Frank McNulty, Jr.	Va.		
Steelman, Lewis Tilden	Mich.	M.S. 1939, University of Tennessee	D.C.
B.M.E. 1936, Syracuse University			
Stearns, Edna Vyvyan	Canada	Steiner, Otto Thomas	
Steen, Philip Clifford	W.Va.	A.B. 1937, The George Washington University	
Steen, Donald Max	D.C.	Steiner, Paul Lewyn	D.C.
Steen, Philip John	D.C.	Steiner, Levi Fred	N.Y.
Stead, Mildred Elizabeth	Va.	Steiner, Esther Bertha	Mo.
B.S. 1931, State Teachers College, Fairville		A.B. 1937, The George Washington University	
Steed, Robert Earl	N.C.	Steinbocker, Alan Cox	Pa.
A.B. 1937, Pennsylvania State College		Steinbocker, Eugene Beachel	Pa.
Steele, Lendell Eugene	N.C.	Steinbocker, Roger	D.C.
Steele, Patricia Coles	Va.	A.B. 1939, The George Washington University	
Steele, Shirley	D.C.	Steinbocker, Robert Jay	D.C.
Steele, Walter Edward	D.C.	B.S. 1943, University of Nebraska	
Steenerson, Palmer Seymour	D.C.	Steinbock, Ardeell	Iowa
Steen, Arthur D.	N.C.	A.B. 1939, Drake University	
A.B. 1935, Elon College		Stein, Jack Lowell	Md.
I.M. 1942, University of North Carolina		Stempson, George William, Jr.	Minn.
Steffis, Richard Carlisle	Va.	Stenger, Howard William	D.C.
A.B. 1933, Roanoke College		Stephens, John James	Ill.
Steffis, Nelly	D.C.	Stephan, Peter Gertrude	Ill.
B.S. 1938, University of Maryland		Stephens, James Charles	Va.
Stead, Edith Beverly	N.C.	A.B. 1937, A.M. 1938, University of California	
Stell, Edward III	Md.	Stephens, John	Fla.
A.B. 1937, The George Washington University		A.B. 1936, The George Washington University	
Stedell, James Charles	Tenn.	Stephens, Lonnie Vinson	Va.
Stein, Barnett	Md.	A.B. 1935, University of Arkansas	
Stein, Charles	D.C.	Stephens, Marvin Mashev, Jr.	Va.
B.S. 1934, Case Institute of Technology		Stephens, Nadya	D.C.
Stein, Harold Lawson	N.Y.	Stephens, Olive Audrie	D.C.
A.B. 1937, The George Washington University		Stephens, Robert Paul	Fla.
Stein, Helen Louise	D.C.	A.B. 1941, A.M. 1947, Harvard University	
Stein, Jerome M.	D.C.	Stephens, William Theodore	Md.
B.S. 1936, Agricultural and Mechanical College of Texas		Stephenson, Earl Donald	D.C.
Stein, Joan Ullman	D.C.	Stephenson, Fenton Graham	D.C.
Stein, Laura	Pa.	Stephenson, Juanita Mould	S.C.
Stein, Mervin	Pa.	Stephenson, Mabel Edward	Va.
B.S. 1937, B.C.E. 1948, Rensselaer Polytechnic Institute		A.B. 1935, Randolph-Macon Woman's College	
Stein, Paula M.	D.C.	B.S. 1938, Columbia University	Va.
Stein, Ruth	D.C.	Stephenson, Stephen Hall	W.Va.
Stein, Selma	D.C.	Stephens, Nancy Moss	
Stein, Shirley	N.Y.	A.B. 1938, Sweet Briar College	
A.B. 1939, The George Washington University		Stepura, August	N.Y.
Stein, Suzanne	D.C.	Stepura, Hildegard	D.C.
Steindorfer, Walter Henry, Jr.	D.C.	Steinman, Louis Powell	Va.
B.S. 1937, Emory and Henry College		Steinman, Marion Thornton	Tex.
Steinberg, Dorothy	D.C.	B.B.A. 1939, Baylor University	
A.B. 1932, Hunter College		Sterling, Milton Calvin	D.C.
Steinberg, Helen Teresa	D.C.	Sterling, William Norton	D.C.
Steinberg, Ira George	Md.	Stern, Estelle	Pa.
B.S. 1938, Pennsylvania State College	N.Y.	Stern, Frank	N.Y.
Steinberg, Willard	Minn.	B.S. 1939, Union College and University	
Steinberger, Hugh Marion	D.C.	Sternberg, Arnold Charles	Mass.
B.S. 1941, University of Virginia		A.B. 1937, University of Wisconsin	
Steiniger, John Francis, Jr.	D.C.	Stetson, John Hewes	Md.
A.B. 1938, LL.B. 1949, University of Kansas		A.B. 1938, University of Maryland	
		Stetson, Richard	Md.
		A.B. 1938, The George Washington University	
		Stetson, Rufus Edwin, Jr.	Maine
		A.B. 1937, Bowdoin College	

Stevias, Alexander Louis	Pa.	Stibravy, Lois	Va.
Stevens, Alberta Mary	D.C.	A.B. 1942, The George Washington University	Pa.
Stevens, Blanche Iona	D.C.	Stichler, William Isaac	Mich.
A.B. 1927, Tabor College		Stickland, Lois Marie	N.Y.
A.M. 1927, Columbia University		Stickney, Bernard	
Stevens, Chas. Benjamin	Colo.	B.S. 1938, College of the City of New York	Miss.
B.S. 1930, United States Naval Academy		Stickney, Herbert Camp	Md.
Stevens, Donald, Jr.	Ohio	Stiefel, Eleanor Brooke	Conn.
A.B. 1929, Muhlenberg College		Stiefel, Jeanne Jennie	
Stevens, Douglas C.	D.C.	A.B. 1947, Connecticut College	D.C.
Stevens, Douglas King	D.C.	Stier, Clare Ann	Md.
Stevens, Ernest Evans	Md.	Stifter, William Warren, Jr.	
B.S. 1938, United States Naval Academy		A.B. 1939, Amherst College	Pa.
Stevens, Galloway	D.C.	Stigers, Donald William	N.J.
Stevens, Gene Casper	Tex.	Stiles, Meredith Newcomb, Jr.	
Stevens, Joan Isabella	Va.	A.B. 1946, Amherst College	Va.
Stevens, John Cameron	Mass.	Still, Joseph William	
Stevens, Joseph Leopold	Md.	M.D. 1936, University of Nebraska	
S.I.D. 1935, University of Vienna		M.P.H. 1941, Johns Hopkins University	Va.
Stevens, Lemuel Mussetten, Jr.	D.C.	Stiller, Joy Dancis	
B.S. 1933, United States Naval Academy		A.B. 1940, Hunter College	D.C.
Stevens, Mary Schoff	N.H.	Stilling, Richard Justesen	D.C.
Stevens, Nancy Reynolds	Va.	A.B. 1950, University of Maryland	D.C.
Stevens, Rhoda Eugenia	D.C.	Stillman, William Cripe	D.C.
Stevens, Sara Estelle	Pa.	Stilson, Lewis Francis	Ohio
B.S. 1948, Pennsylvania State College		Stilwell, Shirley Adaline	Ind.
Stevens, Willard Lamont	D.C.	Stingle, Howard Ellsworth	
Stevens, William Henry	Iowa	A.B. 1942, A.M. 1947 The George Washington University	D.C.
Stevenson, Blair Wayne	D.C.	Stinson, Laura Virginia	W.Va.
Stevenson, Donald Samuel	D.C.	Stinson, Willis Cullen	
Stevenson, William Benson	Md.	A.B. 1930, Marshall College	D.C.
Stewart, Allan Hugh	Calif.	Stirling, Edwin Tillman	D.C.
Stewart, Charles Todd, Jr.	Md.	Stirling, Theresa May	D.C.
A.B. 1946, A.M. 1948, The George Washington University		Steinman, Joseph	
Stewart, Clark Berry	Va.	B.S. in E.E. 1934, Cooper Union	Va.
B.M.E. 1948, Clemson Agricultural College		Steitely, David Wesley	Va.
Stewart, David Alfred, Jr.	Miss.	B.S. 1949, Pennsylvania State College	Va.
Stewart, Elijah Kirk	Okla.	Steith, James Logan	Va.
Stewart, Francis Clement	Pa.	Steuber, Alford Karl	Va.
Stewart, Francis John	Pa.	Stockard, Charles Gier	D.C.
A.B. 1948, West Virginia University		Stockert, Claude Norman	Okla.
Stewart, Henry	Nev.	Stockstill, Louis R.	Va.
A.B. 1948, University of Nevada		Stockton, Lorraine Mabley	Ga.
Stewart, Howard Nauva	Va.	Stofko, Stephen James, Jr.	Va.
Stewart, Inez Gertrude	Va.	B.S. 1947, University of Maryland	Fla.
Stewart, Jonas Hartsell	D.C.	Stonewall, Marion Russell	Pa.
B.S. 1949, Alabama Polytechnic Institute		Stokes, James Arthur	
Stewart, Laddie Joseph	Pa.	Stolarski, C. Robert	
A.B. 1949, West Virginia University		A.B. 1948, A.M. 1949, The George Washington University	Sc.
Stewart, Louise Edna	Mass.	Stoll, Ervin Wighman	
A.B. 1949, Boston University		B.S. 1947, L.L.B. 1948, University of South Carolina	N.C.
Stewart, Mildred Letitia	N.C.	Stoll, Maurer Schoteld	D.C.
Stewart, Paul	Md.	Stoll, Walter Arthur	D.C.
Stewart, Robert Allan	D.C.	Stoltzfus, William Alfred, Jr.	Md.
Stewart, Robert Malcolm	Va.	Stolwein, Walter	
B.S. 1947, California Institute of Technology		B.S. 1937, College of the City of New York	D.C.
Stewart, Rodney Ward	D.C.	Stolworthy, Harvey Leigh	N.Y.
A.B. 1933, Carleton College		Stone, Arthur	
A.M. 1934, University of Chicago		B.M.F. 1948, College of the City of New York	Va.
Ph.D. 1938, Harvard University		Stone, Barbara Nell	Temp.
Stewart, Walter Burton	D.C.	Stone, Bernice Priscilla	Pa.
Stewart, William Alexander	N.Y.	Stone, Betty Barbara Trump	Temp.
B.Met.E. 1949, Rensselaer Polytechnic Institute		Stone, Bruce Douglas, Jr.	N.Y.
		Stone, Burton Francis	D.C.
		Stone, Clyde	

Stone, Frank Taylor, Jr.	Va.	Strand, Henry Vernon	D.C.
Stone, Gregory King	D.C.	B.S. 1939, College of William and Mary	
Stone, Helen Seegar	Ind.	B.L.S. 1942, University of North Carolina	
A.B. 1936, Northwestern University		Strasser, Noel Faine	Ky.
A.M. 1940, The George Washington University		Stratman, Mahlon Marie	D.C.
Stone, James Robert	D.C.	Stratton, Clinton Joshua, Jr.	Kans.
A.B. 1949, The George Washington University		A.B. 1941, Dartmouth College	
Stone, John Beauden	D.C.	L.B. 1947, Yale University	
Stone, Joseph Jack	D.C.	Stratton, Eugene Aubrey	Mass.
Stone, Margaret Ann	W.Va.	Stratton, Lawrence	N.Y.
Stone, Robert Charles	N.Y.	A.B. 1947, The George Washington University	
Stone, Robert Oliver	Md.	Stratton, Lydia Anne	Kans.
Stone, Rose Louise	W.Va.	A.B. 1944, Wellesley College	
A.B. 1947, The George Washington University		L.B. 1947, Yale University	
Stone, Rose R.	Ohio	Straub, Josephine Towler	D.C.
Stone, Stephen Noel	N.Y.	Straub, Robert Lee	Va.
A.B. 1948, Brooklyn College		Straus, Alma Fleur	D.C.
Stone, Virginia Greer	Md.	Strawser, Bess Esther	N.Y.
Stone, Waleta Mae	Okla.	Strass, Iris May	D.C.
A.B. 1949, Oklahoma Agricultural and Mechanical College		Strawbridge, Lawrence William	D.C.
Stone, Walter Kersten	Nebr.	Strawbridge, Phyllis Jean	D.C.
Strickland, Dan	N.Y.	Streels, Davis Baldwin	D.C.
A.B. 1947, University of Rochester		Streels, Samuel Stephen	Calif.
Strickbraker, Jean Ross	N.Y.	Street, Bennett Irving	Pa.
A.B. 1947, University of Rochester		Street, Clara Julia	
Stoneman, Patricia Ray	Wis.	L.B. 1949, The George Washington University	
Stoner, James Reist	Pa.	Strickland, George Gregory	D.C.
B.S. 1949, Franklin and Marshall College		Strickland, Lawrence Gordon	Va.
Stoner, Merle McLaughlin	Pa.	A.B. 1947, The George Washington University	
Stoops, Richard Eugene	Wash.	Strickler, Richard Gahagan	Va.
Storck, Jacob Henry	D.C.	A.B. 1932, Pennsylvania State College	
B.S. 1949, Georgetown University		Strickman, Louis	Va.
Storrell, Louis Francis	N.J.	A.B. 1948, The George Washington University	
Stork, Creighton Mitchell	S.C.	Strieby, Francis Alvin	D.C.
A.B. 1949, College of Charleston		Strieby, LaRue Thomson	D.C.
Stork, Lois Marshall	Va.	Strickham, Gale Smedley	Md.
Storment, James Russell	Wis.	Strickland, Joseph John	Nebr.
Storres, Herbert Jennings	Va.	Strickland, Julius Steven	Md.
Storrs, Julianne Muri	D.C.	Strickland, Elsie Christine	Wash.
A.B. 1949, Stephen F. Austin State Teachers College		Strickland, Cora Peter	D.C.
Stork, Herbert Alexander	D.C.	A.B. 1948, Yale University	
B.S. 1949, University of Maryland		Strone, Kenneth Cameron	Canada
Storff, Edwin Emmell, Jr.	D.C.	Stronski, Gerald Edward	Mich.
Storck, Charles Wilson	D.C.	Stromer, Calvin Arnold	Okla.
Storck, Curtis Montague	Fla.	A.B. 1947, Harvard University	
Storck, Herald Franklin	Ohio	Strother, Greenville Nash	Va.
Storck, Jean Elizabeth	Md.	B.S. 1941, Virginia Polytechnic Institute	
Storck, Wayne Howard	Md.	Strother, Samuel Lee	W.Va.
Storck, Dorothy Ruth	S.C.	Strother, Doris Lucia	Mass.
A.B. 1949, The George Washington University		A.B. 1947, The George Washington University	
Stovall, Milton Alva	Ala.	Stroud, George Louis	Va.
Stovall, Stephen	Pa.	A.B. 1941, Stanford University	
Stovall, Sam	Ohio	Stumps, Lawson S.	Va.
A.B. 1948, The George Washington University		Stumps, Ray McKinley	Va.
Stovall, Philip	N.Y.	Struble, Allen Herman	D.C.
B.A. 1941, College of the City of New York		A.B. 1939, A.M. 1942, University of Michigan	
L.B. 1949, Georgetown University		Struble, Hazel Elizabeth	Md.
Storran, John Rawson	La.	Struckman, Christine Helene	Calif.
A.B. 1935, Louisiana State University		Strum, Joseph Franklin	Va.
Strader, Helmsa Crompton	Va.	Strupp, Hans Hermann	D.C.
Strair, Howard Alden	D.C.	A.B. 1946, A.M. 1947, The George Washington University	
Strain, Mary Charlotte	Va.		

Strupp, Werner	D.C.	Sullivan, Marchetta Nicholson	D.C.
A.B. 1949, The George Washington University	Iowa	Sullivan, Nancy Ruth	D.C.
Strathers, Melvin, Jr.	N.J.	Sullivan, Palmer Wallace	D.C.
Stricker, Philip Fozburgh	Va.	Sullivan, Patrick Gerald	Te
Stuart, Fred Washburn	Wash.	B.S. in M.E. 1949, College of Mines and Metallurgy	Me
Stuart, Jasper Edwin	Ind.	Sullivan, Robert Maurice	D.C.
Stuart, Kenneth Earl	Md.	Sullivan, Robert Parker	Va.
Stuart, Alexander, Diana Thyra Margaret	Ala.	Sullivan, Samuel Alexander	
Stubbs, Eugene Wilson	Ala.	B.S. 1978, Pennsylvania State Teachers College, Edinboro	PC
Stubbs, Robert Sherwood II	D.C.	Sullivan, Thomas Joseph	NY
A.B. 1942, University of Alabama		Sullivan, Thomas Vincent	PC
Stucke, Adela Leona		A.B. 1942, New York University	M
A.B. 1941, The George Washington University	D.C.	Sullivan, Vivian Evelyn	PA
Stucky, John Richard	D.C.	Sullivan, William Franklin	PC
Stucky, Mary Leona	S.C.	Sullivan, William	
Stuckey, Greenville Murray	D.C.	Sully, William Hopkin	PC
Stuckey, Elizabeth Thomas	D.C.	A.B. 1942, University of Connecticut	AI
Stutz, Arnold Victor	Md.	Summerlin, Virginia Vandenberg	
Stutz, Norman Frederick	Mass.	Summers, Charles Russell	
Stutz, Travers David	Md.	A.B. 1937, A.M. 1938, State College of Washington	PC
B.S. 1945, St. Louis University	Mass.	Summits, Edward Lee	AI
Stutz, Vera Ann	W.Va.	Summons, George Nelson	PC
Stump, Charles Albert		Summers, Gerald Preston	PC
A.B. 1948, University of Pennsylvania	Md.	Summers, Leonard	PC
Sturtevant, Aders, Clarence		Summers, Miss Jane	PC
A.B. 1949, The George Washington University	D.C.	Summers, Robert Allen	M
Stutz, Frank August		Summerson, Mary D.	W.Va.
B.S. 1941, Lehigh University		Sumner, Doris Mue	
A.M. 1946, The George Washington University	Va.	Sumner, Ann Long	
Styles, Michael Hagan		LL.B. 1946, University of Richmond	PC
A.B. 1947, A.M. 1949, University of Virginia	D.C.	A.B. 1946, West Virginia University	
Suber, James Whitley		Sun, I. Shunat	
B.S. 1948, Mississippi State College		A.B. 1942, St. John's University, Shanghai	I
A.M. 1950, The George Washington University	India	Sunderman, Helen Lorraine	Va.
Schroeder, P. N.	D.C.	Sunderman, Shirley Keethan	I
Schroeder, Herschel Cochran		Sunderman, Harold Walter	Philippine
B.S. 1947, M.S. 1948, A.B., B.S., M.Ed. 1949, M.D. 1942, University of Oklahoma	D.C.	Sutton, Arizona	I
Schultz, Homer Leon, Jr.	D.C.	Suzanne, John	PC
Schulze, Teva Rose	Va.	Sutter, Francis Herold	I
A.B. 1947, The George Washington University		B.S. 1941, State University of Iowa	I
Schulz, Elmer Jean	Mass.	Supper, Lou Louisa	
Schulz, Harold Samuel	D.C.	Sutton, Bernard Arthur	
A.B. 1942, The George Washington University		Sutton, Charles Stanley	PC
Seger, William Leonard	N.C.	A.B. 1947, LL.B. 1949, The George Washington University	PC
Selby, Charles	N.Y.	Sates, Ron Stuart	N
B.S. in C.E. 1944, Newark College of Engineering	N.J.	Sutton, Raymond Charles	N
Selmon, Helen	Pa.	Schwartz, Irma Selma	N
Selmon, Van Buren	D.C.	Sutton, Anthony	N
Selmon, Arthur Victor, Jr.	D.C.	Sutton, Arthur	
Selmon, Charles Navier	R.I.	Stanley, Leonard R.	
Selmon, Gary Kaeter	D.C.	A.B. 1948, The George Washington University	Me
Selmon, Eugene Francis	Md.	Sethaway, William	Va.
B.S. 1948, The George Washington University		Sethaway, Dorothy Gable	
Sullivan, Francis John	Md.	Sutherland, Henry Clayton	AI
B.S. 1942, University of Pittsburgh	D.C.	B.S. 1942, Virginia Military Institute	
Sullivan, Henry Earl	Mass.	Sutherland, John William	
Sullivan, John	M.I.	B.S. 1942, United States Coast Guard Academy	
Sullivan, John Christian	N.J.	Sutherland, John Hoyt	W
Sullivan, Joseph Raymond, Jr.		Sutton, Albert Douglas	
B.S. 1947, Georgetown University		Sutton, Herman, Jackson	
		Sutton, Robert J.	N
		B.S. 1941, Bradley University	
		Svensen, Marvin	
		A.B. 1948, The George Washington University	

Swati, Yudhithira	Siam	Swift, Charles H.	Va.
A.B. 1924, Cornell University		B.S. 1924, Springfield College	
Swet, Alice Virginia		Swift, George Warren	Va.
A.B. 1948, University of Minnesota	Minn.	Swift, John Stewart	D.C.
Swafford, Frank Hendrick	D.C.	Swingard, Edward Morris	D.C.
Swain, Tommy Virginia	D.C.	Swindle, Ruth Louise	Pa.
Swafford, Welly Roland	D.C.	Switzer, Margaret Louise	D.C.
Swain, Frances Elton	Va.	A.B. 1946, The George Washington University	
Swain, James Joseph	Md.		
Swain, William Harrison	N.Y.	Switzer, Walter Edwin	Ill.
Swain, James Roger	Ill.	M.S. 1924, University of Illinois	
Swain, Carter Hoffman	D.C.	Swartzall, Lowell Stanley	D.C.
Swain, Isabelle Ivey	N.C.	Switzer, Marvin Davis	D.C.
Swanier, Joe Bailey	Tex.	A.B. 1924, Connecticut College	
A.B. 1925, Howard Payne College		A.M. 1948, The George Washington University	
Swanson, Bert Elmer	Calif.		
Swanson, Elizabeth Louise	Idaho	Sydnor, John	D.C.
A.B. 1927, Colleton College		Sylvester, Eugene Paul	N.J.
Swanson, Henry John	Ill.	Sylvester, Melvin Duncan	Ia.
Swanson, Leaning Fiske	Fla.	B.S. 1922, United States Naval Academy	
A.B. 1925, University of Pennsylvania		I.D. 1926, The George Washington University	
Swanson, Lawrence M.	Minn.		
Swanson, Robert Gust	Mass.	Sylvester, Robert W.	Va.
Swanson, Virginia Anne	D.C.	Symmes, Campbell	N.C.
Swanson, Charles William	Va.	Symons, James Henry	D.C.
Swartz, Christian LeFevre	Pa.	Symon, Anne Bates	Pa.
B.S. 1927, University of Pennsylvania		Symons, Howard Francis	Pa.
LL.B. 1926, Temple University		Szanyi, William Leo	N.J.
Swartz, Dorothy Lucille	Iowa	Sze, Churchill Chia-Chu	China
Swartz, Eugene	Md.	Sze, Charles Eugene	Pa.
A.B. 1928, The George Washington University		Szokolozky, Joseph Stefan	N.J.
Swashburn, Patricia	D.C.	Szollosi, Etienne	D.C.
Swazey, Roy Albert	Va.	B.S. 1920, Budapest University	
Swartz, Edward Chiles	Ill.	M.D. 1926, Sorbonne University	
Swazey, John	Md.		
Swazey, Barbara Marion	Va.	Swed, Clarence Francis	D.C.
Swazey, James Charles, Jr.	Colo.	Szymanski, Norbert Harold	Wa.
B.S. 1928, University of Denver		Szymczak, Sigismund Casimir	Mass.
Swazey, James Stevens			
A.B. 1940, University of Virginia	Md.		
Swazey, Joseph Modeste	D.C.		
LL.B. 1948, Harvard University			
Swazey, Robert Thompson	Va.		
A.B. 1941, University of Kentucky			
Swazey, Stuart Thomas Hackstaff	N.J.		
A.B. 1940, Upsala College			
Swazey, Vincent Albert	D.C.		
B.S. 1925, United States Naval Academy			
Swazey, Vincent Hilary	Mass.		
B.S. 1940, Boston College			
Swazey, William Finbar	D.C.		
Swazey, Gene	Calif.		
Swazey, John Manko	Pa.		
Swazey, William Luther	R.I.		
Swazey, Henry Becker	Pa.		
B.S. 1941, United States Naval Academy			
Swall, Leon	N.Y.		
B.S. 1948, College of the City of New York			
M.S. 1949, The George Washington University			
Swanton, Robert Owen	D.C.		
Swazey, Roy Eugene, Jr.	N.J.		
Swanson, Dale Abbott	Utah		
Swanson, J. Elmore	Va.		
B.S. 1940, University of Utah			
Swenson, Nellie Jean	D.C.		
Swenson, George Dayton	D.C.		
Swett, Charles	Okl.		

Talbot, Charles Edward, Jr. A.B. 1948, American University	Va.	Tatum, Zella F. B.S., A.B. 1940, Texas Christian University	Tex.
Talbot, Elizabeth Jeannette	D.C.	Taube, Mortimer	MA
Talbot, Orwin Clark	Calif.	Ph.D. 1935, University of California	D.C.
Tallent, Philip	D.C.	Tauber, Leonard Murray	D.C.
Tallent, Alice Lucille	Calif.	Tauber, Lilly Katherine	
Talley, Betty Jane	Md.	A.B. 1947, Peter Pazmany University, Budapest	N.Y.
Talley, James Staton	Va.	Taubman, Catherine	
A.B. 1949, The George Washington University		A.B. 1947, New York University	Va.
Talley, John Heyward	S.C.	Tavener, Frank Brennan	
Talley, Marilyn Hunter	Va.	LL.B. 1949, The George Washington University	D.C.
Tamer, Joseph Jacob	D.C.	Taylor, Ada Elizabeth	
Tamson, Robert	D.C.	A.B. 1949, The George Washington University	D.C.
Tan, Chuan Yao	Siam	Taylor, Andrew Eustace	
Tan, Pai-Men	D.C.	R.S. in M.E. 1947, Tufts College	Gl.
Tan, Toh-Leng	D.C.	Taylor, Brown	Md.
Tanck, Roland Henry	Wis.	Taylor, Charles Elmer	
A.B. 1949, University of Wisconsin		Taylor, Charles Elmer, Jr.	D.C.
A.M. 1948, The George Washington University		B.S. 1948, University of Maryland	
Tang, Tze-Tung	China	Taylor, Daniel Gerald	D.C.
B.S. 1949, St. Mary's College, Minn.	Ark.	A.B. 1949, Salem College, W.Va.	Ill.
Tankersley, James David, Jr.		Taylor, David Howard	Tex.
A.B. 1948, University of California	Fla.	Taylor, Donald Kent	
Tankersley, Laurence Dempsey	Va.	Taylor, Dorothy Jane	
Tanneberger, Walter Samuel	Ill.	A.B. 1944, Rice Institute	
Tannenbaum, Muriel Joyce	Idaho	M.S. 1947, Iowa State College of Agriculture and Mechanic Arts	D.C.
Tanner, Howard H.		Taylor, Dyer Justice	D.C.
B.S. 1949, Utah State Agricultural College		Taylor, Edward Ruthbun	Qua.
Tanner, Lloyd John	Iowa	A.B. 1947, Lafayette College	Qu.
Tanner, Seymour William	D.C.	Taylor, Eldon Donavan	Qu.
Tanner, Thomas Louis, Jr.	Va.	Taylor, Francis Gordon	
Tynnhanser, John Ulrich	Md.	Taylor, Frank, Jr.	D.C.
Tasso, James Dimitri	Pa.	A.B. 1945, Mercer University	Fla.
A.B. 1949, University of Pennsylvania	N.Y.	Taylor, Frank London	D.C.
Tatner, Francis Sherwood		Taylor, George Oliver	D.C.
A.B. 1949, Syracuse University	Ill.	Taylor, Grisel Rosemary Frances	Va.
Taphorn, Joseph Bernard		Taylor, Harold Emory	Md.
B.S. in Agri. 1943, University of Illinois		Taylor, Harry Earl, Jr.	
B.S. in Eng. 1949, The George Washington University		A.B. 1948, The George Washington University	Conn.
Taques, Ruth McVitty	D.C.	Taylor, Harry Hall	Fla.
A.B. 1929, Bryn Mawr College		Taylor, Herbert Bradley	Va.
Tarpy, Joan Ann	Va.	Taylor, Ira White	
Tartaglino, Andrew Charles	R.I.	A.B. 1948, University of Arkansas	Va.
B.S. 1949, Georgetown University		Taylor, Irving Henry, Jr.	
Tarver, Mary Eugenia	Ga.	A.B. 1949, The George Washington University	Ky.
Tashiro, Jane Miako	Fla.	Taylor, James D.	
Tashjian, Lee Charles	Md.	A.B. 1948, Western Kentucky State Teachers College	Md.
A.B. 1949, The George Washington University		Taylor, John Alvin	Okla.
Taske, Morton Jerome	D.C.	Taylor, John Frank	
Tassonev, Joseph Patrick	Pa.	A.B. 1946, LL.B. 1949, University of Oklahoma	Va.
B.S. 1949, University of Pittsburgh	D.C.	Taylor, John Henry	Va.
Tatarsky, Walter		Taylor, John Perry	Va.
A.B. 1949, The George Washington University		Taylor, Kenneth Morrison	
Tate, David Bramblett	D.C.	Taylor, Lela Sims	
Tate, Marian Keefer	Md.	B.S. 1928, Tennessee Agricultural and Industrial State College	Va.
A.B. 1944, The George Washington University		Taylor, Lillian Pearl	S.C.
B.D. 1948, Chicago Theological Seminary		Taylor, Marvin Elliott	Md.
Tatelman, Gretchen Blumberg	D.C.	Taylor, Mary Landon	Calif.
Tatom, Mary Helen	N.J.	Taylor, Maurice Francis Walker	
A.B. 1947, The George Washington University		B.S. 1949, Purdue University	Md.
A.M. 1940, Catholic University of America		A.M. 1940, Indiana University	D.C.
		Taylor, Paul Harold	
		Taylor, Paul Strother	

Taylor, Quay Franklin	Md.	Terry, Leslie Dean	Va.
B.S. 1944, Pennsylvania State College		Terry, Richard Allan	D.C.
Taylor, Ralph Edward	Md.	A.B. 1943, University of Notre	
Taylor, Richard Orme	D.C.	Dame	
Taylor, Robert Leslie	N.Y.	Teske, Elaine Theodora	Wis.
A.B. 1941, Syracuse University		Tevelow, Frank Lewis	N.J.
Taylor, Rufus Lockland	Md.	Tew, Mary Elizabeth	Va.
B.S. 1944, United States Naval		Tew, Sarah Elizabeth	N.C.
Academy		Thack, Margaret Ann	Ohio
Taylor, Ruth	Md.	Thackara, James Lustin	D.C.
A.B. 1914, College of William and		A.B. 1936, Harvard University	
Mary		Thacker, Elizabeth Susan	D.C.
Ed M. 1946, Temple University		Thackston, Carl Richard	S.C.
Taylor, Samuel de Guyon	Conn.	A.B. 1949, Furman University	D.C.
Taylor, Sheldon Billy	Va.	Thala, Grace Augusta	Va.
Taylor, Theodore Higgins	Ill.	Tharald, Edgar Kent	Va.
Taylor, Vernon Edgar	Md.	Thelen, Milton	
Taylor, Warren Francis	La.	A.B. 1949, The George Washington	
Taylor, Wilbur Asher	Md.	University	Pa.
Taylor, Wilford Cassidy, Jr.	D.C.	Thaler, William David	D.C.
A.B. 1947, Lafayette College		Thalys, Paul Salvatore	D.C.
Taylor, William Charles	Pa.	Tharp, Mary Ann	D.C.
B.S. 1941, University of Pennsylvania		Thaspe, Clyde Coalson	La.
Taylor, William Russell	Md.	Thatcher, Dona Sadie	
Teagle, Farness Howard	D.C.	A.B. 1941, Tulane University	
Teague, Harold Hamner	D.C.	A.M. 1942, University of Michigan	Md.
Teaze, Robert Stewart	Md.	Thawley, Charles Brooks	D.C.
A.B. 1949, Dartmouth College		Thayer, Harry Homer	N.J.
Tebeau, John Peter	R.I.	Thayer, Luke I.	Pa.
Teicher, Martin Richard	Va.	Thierberger, Frederick	Ky.
Teizer, Elizabeth Ann	Mass.	Thibault, Frederick H.	Mass.
Teizer, Veronica Helen	Mass.	Thibault, Ursula McEnroy	D.C.
Teel, Charlotte	D.C.	Thierholt, George John	Mass.
A.B. 1928, University of Michigan		Thierholt, Frederic Russell	
Teisler, George Edward	D.C.	B.S. 1935, M.S. 1942, Ph.D. 1942,	
Teisler, George Edward		University of Massachusetts	Va.
Teisler, Virginia Joyce	D.C.	Thierholt, Harold John	Va.
Teisler, Walter William	Va.	Thierholt, Rene John	Va.
Teisler, Louis	D.C.	Thierholt, George Frederick	
Teisler, Sara	D.C.	A.B. 1941, University of Utah	Iowa
Teisler, Stanley Shay	Md.	Theremin, Esther Blanche	Md.
Teisler, Carl Robert	D.C.	Thibault, Andrew Francis	
B.S. 1944, United States Naval		A.B. 1948, The George Washington	D.C.
Academy		University	
Teller, Harold Robert	N.J.	Thiel, Orin S.	
Teller, Adele	D.C.	A.B. 1915, J.D. 1917, University	
Teller, Arthur Charles	D.C.	of Chicago	Md.
Tenbrun, Henry	D.C.	Thielemann, Henry Bien	D.C.
Ph.D. 1942, Aix-Marseille, France		Thomas, Arthur Russell	
Tenison, Joseph	D.C.	B.S. in M.E. 1946, Virginia	Va.
B.Com. 1948, University of Cape		Polytechnic Institute	
Town, South Africa		Thomas, Augustus Howell, Jr.	
Tennant, Suzanne Rosalie	D.C.	B.S. 1943, Virginia Polytechnic	
A.B. 1947, University of the		Institute	Pa.
W. & A. 1947, South Africa		Thomas, Betty Jane	Mo.
Tennant, William Harrison	Fla.	Thomas, Carl William	N.J.
A.B. 1949, La Salle College		Thomas, Charles Buddy	D.C.
Tennant, William Samuel, Jr.	S.C.	Thomas, Charles Lawrence	
A.B. 1948, The Citadel		Thomas, Earl Arnold	
Tennery, Billy Jack	Md.	A.B. 1949, The George Washington	Va.
A.B. 1949, The George Washington		University	Va.
University		Thomas, Earl Griffith	
Tennison, George	D.C.	Thomas, Eleanor Richard	
Tetter, Myrtis Samuel	Va.	B.S. 1941, University of Massachusetts	Md.
Tetter, Irene Thelma	Va.	Thomas, Ernest Eugene	Conn.
Tet, Norma	Va.	Thomas, Eugene Ray, Jr.	
Tetzel, Jane Kathryn	Conn.	A.B. 1943, Wesleyan University	Fla.
Tetter, Horace Lozader	Va.	L.B. 1944, University of Virginia	
Tetter, George Thompson	Va.	Thomas, Frank Vesta	
Tetter, George Mylford	Md.	A.B. 1943, The George Washington	Wis.
A.B. 1947, The George Washington		University	Md.
University		Thomas, Gordon Frank	
		Thomas, Grace Ruth	

Thomas, Gregory	Md.	Thompson, Edwin	Kans.
Thomas, Henry Archer	D.C.	Thompson, Edwin Strook	Pa.
Thomas, Howard Adams	Va.	B.S. 1933, Tri-State College	D.C.
Thomas, Howard Francis	D.C.	Thompson, Elizabeth Anne	D.C.
Thomas, James	Md.	Thompson, Emma Louise	Va.
B.S. 1948, University of Maryland	Va.	Thompson, Evelyn Lee	Va.
Thomas, James Alfred		B.S. 1941, Southeast Missouri State	
B.S. 1932, United States Naval		College	
Academy		Thompson, Frank Revell	D.C.
Thomas, John Breckenridge, Jr.	Ky.	Thompson, Garland Parnell	N.Y.
A.B. 1934, Western Kentucky State		Thompson, Geoffrey	Va.
Teachers College		Thompson, George Lawrence, Jr.	Md.
A.M. 1940, Indiana University		Thompson, George Richard	Md.
Thomas, John James	Idaho	B.S. 1948, Loyola College	D.C.
B.S., M.S. 1943, University of Idaho		Thompson, Harry Francis	D.C.
B.S. 1948, University of Kansas		Thompson, James Douglas	
Thomas, Joseph Melvin	Md.	Thompson, James Elmer, Jr.	Nev.
Thomas, Kate Wheat	Va.	A.B. 1945, University of Maryland	Va.
A.B. 1943, Basin Mawr College		Thompson, James Henry	Va.
Thomas, Luther Austin	Va.	Thompson, John Masley	N.C.
Thomas, Mark Poulton	Va.	Thompson, Joseph Fisher, Jr.	D.C.
Thomas, Myrtle	D.C.	Thompson, Judith Covington	D.C.
B.S. 1942, Radford College		Thompson, Lane Storer	Va.
Thomas, Orville Milton	D.C.	Thompson, Laura Josephine	Ga.
A.M. 1947, Colorado State College		Thompson, Louis Clifford	
of Education		Thompson, Lucius Fred	
Thomas, Paul Augustus, Jr.	Pa.	LL.B. 1949, The George Washington	Va.
B.S. 1947, The George Washington		University	Ala.
University		Thompson, Mary Lucille	Iowa
Thomas, Paul DeLoren	Va.	Thompson, Mary Warren	
B.S. 1948, Central State College,		Thompson, Matthew Charles	
Oklahoma		B.S. 1949, Iowa State College of	
A.M. 1949, University of Oklahoma		Agriculture and Mechanic Arts	D.C.
Thomas, Pauline	Ind.	Thompson, Owen Bruyere	Va.
Thomas, Ralph Leslie	Fla.	Thompson, Philip Adams	Mo.
B.E.E. 1947, University of Louisville		Thompson, Ralph Franklin	Pa.
Thomas, Raymond Carrington	D.C.	Thompson, Robert Earl	Va.
Thomas, William Bates	D.C.	Thompson, Robert Lee	Va.
Thomas, William Francis	Mass.	Thompson, Russell Claude, Jr.	
Thomas, William Franklin	Oreg.	Thompson, Sara Anne	Md.
B.S. 1948, University of Oregon		B.S. 1946, Madison College	
Thomas, William Kindred	D.C.	Thompson, Stanwood	
Thomasson, Mary Magdalene	D.C.	A.B. 1949, State College of	Md.
Thompson, Richard Gage	Va.	Washington	
Thompson, Albert Lacy	D.C.	Thompson, Thomas Carlton, Jr.	D.C.
Thompson, Allan Glasgow	D.C.	B.S. 1948, University of Pennsylvania	Va.
B.S. in E.E. 1942, Montana State		Thompson, William Arthur Lathrop	
College		Thompson, William Blake	
Thompson, Annie Upchurch	Va.	A.B. 1947, The George Washington	Pa.
A.B. 1932, East Carolina Teachers		University	D.C.
College		Thompson, Willis Clayton, Jr.	S.D.
Thompson, Arthur Brown, Jr.	Pa.	Thompson, Winifred Grace	N.Y.
Thompson, Ben Hanford	Md.	Thomson, Dona Jean	D.C.
B.S. in Ed. 1942, Rutgers University		Thomson, Eugene	Va.
Thompson, Beverly Ann	Mass.	Thomson, Malcolm Stuart	Calif.
Thompson, Blaine Clairmont	Md.	Thomson, Robert Lee	D.C.
A.B. 1946, Tulane University		Thorning, Harry Sumpter	D.C.
Thompson, Carl Franklin	Mo.	Thorndyke, Myron Samuel	Va.
Thompson, Colin Edward, Jr.	D.C.	Thorne, Charles Harry, Jr.	D.C.
Thompson, Conrad Warden	W.Va.	Thorne, Joseph Phillip	
B.S. 1948, Marshall College		Thorniley, Robert Miller	
Thompson, Curtis Eugene	Va.	LL.B. 1949, The George Washington	D.C.
A.B. 1940, Concordia College		University	
Thompson, Delores Mae	D.C.	Thornton, Luther Junior	N.C.
Thompson, Dorothy Morse	D.C.	A.B. 1950, James Millikin University	N.H.
Thompson, Edgar Hall, Jr.	Md.	Thornton, Percy, Jr.	Va.
B.S. 1916, United States Military		Thornton, Susan Leona	D.C.
Academy		Thornton, William Milo	
Thompson, Edna Liela	Md.	Thorpe, Emmet Joseph	Va.
Thompson, Edward Mathew	Va.	B.S. 1948, Western Reserve University	Md.
B.S. 1950, United States Naval		Thorp, Jacob Oliver	Wash.
Academy		Thorp, Pauline	
M.S. 1928, Columbia University		Thorson, Wilbur Lee	

Thrasher, Ralph Hampton	Md.	Todd, Fula Catherine	Maine
Threadgill, Eugene Earl	D.C.	Todd, James Edward	Ill.
A.B. 1940, University of Florida		Todd, B.S. 1949, St. Ambrose College	
LL.B. 1944, Georgetown University		Todd, Troy Mitchell	Md.
Threadgill, William James	Miss.	Todd, Vernon Richard	Md.
A.B. 1947, University of Mississippi		Todd, William Henry	D.C.
Thrift, Sterling Reynolds	D.C.	Todd, Benoit	Iowa
Thrift, William Carroll	D.C.	Tolman, John Alfred, Jr.	D.C.
Throckmorton, Walter Jackson	Va.	Tolman, Francis Raymond	Nebr.
Throne, Junior Arthur	Md.	Tollison, Charles William	D.C.
B.S. 1939, State Teachers College,		Tolley, Howard Elmer	Va.
Milwaukee		B.S. 1947, University of California	
Thuma, Jeremiah Absalom	Md.	Tollev, Marjorie Elizabeth	D.C.
Thurman, Dale Leonard	Va.	Tolliver, John Sheridan	Md.
B.S. 1939, University of Nebraska		Tolliver, Robert James	S.D.
Thurman, John Nelson	Ariz.	Tolson, Evelyn Hurd	D.C.
B.S. 1949, Georgetown University		Tolson, Raymond Lee	Va.
Thurmond, Cornelius Brooks, Jr.	Ga.	Tolson, Robert Homish	D.C.
Thurston, Virginia Sweeney	W.Va.	Tolson, Ruth Alice	Pa.
A.B. 1923, West Virginia University		Tonack, Robert F.	Pa.
Thye, Carl John, Jr.	D.C.	Tonkka, Leonard George	Va.
Thies, Louis James	D.C.	Tonko, George Nicholas	Pa.
Thuror, Laura Flehr	D.C.	Tompkins, John Emmet	Va.
Thurston, William Ormsby	N.C.	A.B. 1944, The George Washington	
Tustin, Howard Erwin	D.C.	University	
Tibbels, Ruth Boney	D.C.	Tompkins, Virgil Everett	N.Y.
Tibbets, Richard Herbert	Md.	B.S. 1942, New York State Teachers	
Tibbets, Robert Freeland	D.C.	College, Albany	
Tibbets, William John	D.C.	A.M. 1947, The George Washington	
Tibbets, Robert Cash	Mo.	University	
Tibbitt, David Winship	Va.	Toma, Stephen	Pa.
P.M.E. 1945, University of Virginia		Toner, Mary Cunningham	D.C.
Tiedman, John George	D.C.	Tong, Gordon Joseph	Calif.
Tier, John Francis	Md.	Tong, Richard Koon Wong	Hawaii
Tighe, Paul Newman	Pa.	Tonkin, Edward Eugene	Md.
Tiley, Edward Henry, Jr.	W.Va.	Tonkin, Andrew Adolph	Ill.
A.B. 1948, West Virginia University		Tonty, Carl Joseph	Pa.
Tiller, Harvey Pellock	Va.	Toomey, John Samuel	Tenn.
Tilley, Emerson Scott	Md.	A.B. 1949, The George Washington	
Tilman, Murray	N.Y.	University	
A.B. 1944, Brooklyn College		Toomes, Thomas Joseph	D.C.
Tilman, Alfred Albert	N.Y.	Toomey, William Joseph	D.C.
B.S. 1941, New York University		A.B. 1948, A.M. 1950, St. Louis	
Tilly, James Lewis	Colo.	University	
Tilton, John Snyder	Va.	Toompas, Charles Arthur	W.Va.
A.B. 1948, The George Washington		A.B. 1948, West Virginia University	
University		Toster, Jean Rita	W.Va.
Tilton, Vincent E.	Md.	Touchman, Byron Rimbey	
Tinamius, Joseph Edward, Jr.	Va.	A.B. 1946, Fairmont State College	
Tinms, Edyth Alice	Va.	A.M. 1948, West Virginia University	
Tinms, Molly Anne	D.C.	Topitzky, Dorothy	D.C.
B.S.F. 1940, University of the	Philippines	A.B. 1944, Brooklyn College	
Philippines		Topp, Mary Lucille	Conn.
Tippett, Esther Blomh	Va.	Topp, Max Edward	
A.B. 1929, Indiana State Teachers		A.B. 1944, University of Pennsylvania	
College		Tor, Mildred Helen	D.C.
Tipton, Clarence Lee	D.C.	Torison, Roy Reed	Wash.
Tipton, Webster White	Md.	Torison, Norman Gilbert	D.C.
Tislate, Henry Edward	Va.	Torpenson, Jean Tate	D.C.
Tule, Irwin	D.C.	A.B. 1947, University of Wisconsin	
Tunne, Charles Franciscos	N.Y.	Toro, Rafael Andres	Puerto Rico
Turkey, George Frank	Md.	B.S.A. 1921, University of Puerto	
Tutler, Ruby Bonita	D.C.	Rico	
Tutts, Elijah White, Jr.	D.C.	M.S. 1925, Cornell University	
Tutson, John Thomas, Jr.	D.C.	A.M. 1946, Harvard University	
Tutuz, Fygin	Mass.	Torp, Mary Jane	S.D.
Tobias, James Howard	D.C.	B.S. in Ed. 1944, Northern State	
Tobin, Mary Iovantha	D.C.	Teachers College	
Tobin, Patricia Ann	D.C.	Torrey, William Abner, Jr.	D.C.
Toda, Ralph Aloysius	Mass.	Toth, Joseph	N.Y.
Toda, Kumao Kenneth	Va.	Toth, Joseph Charles	D.C.
Todd, Douglas Dean	D.C.	B.S. 1941, United States Naval	
	N.C.	Academy	

Toth, Joseph Ralph	Md.	Trettin, Harold Donald	D.C.
B.S. 1938, University of Minnesota		Trenmann, Walter	Mo.
Tottle, Edward Loring	Maine	A.B. 1946, Washington University	
Towada, Elena Consuelo	D.C.	A.M. 1948, University of Chicago	Tex.
Towma, Amelia Mary	D.C.	Trevino, Ernestine	
Tourangeau, Dolores Irene	D.C.	A.B. 1948, Texas College of Arts	
Tovera, Candido Mulato	Philippines	and Industries	Mich.
Towler, Owen	N.Y.	Trevisan, Edward Anthony	Mich.
Tower, Everett Theodore	N.J.	Trevisan, Carl Arthur	
Towne, Verna Steel	Md.	A.B. 1942, University of Michigan	Ind.
B.S. 1924, University of Minnesota		Tribbe, Richard Stewart	D.C.
Towner, George Crosby	Mont.	Trible, William MacLellan	
B.S. 1924, United States Naval		A.B. 1941, Princeton University	D.C.
Academy		Trickett, Arthur Roland, Jr.	D.C.
M.S. 1931, Carnegie Institute of		Trickett, George Waldeck	D.C.
Technology		Trigo, Carmen Beien	D.C.
Townsend, Alice Elizabeth	N.C.	Trimble, Mary Allan	Pa.
A.B. 1949, University of North		Trimble, Sara Inez	
Carolina		A.B. 1946, Seton Hill College	D.C.
Townsend, Charles Eby	D.C.	Trimble, South	
A.B. 1948, The George Washington		B.S. 1948, University of North	Va.
University		Carolina	Va.
Townsend, Kathryn Marie Anna	D.C.	Tripp, Bonnie Bell	
Townsend, Marion Rhodes	D.C.	Tripp, Richard Carlton	
Townsend, Robert Arnold	Va.	A.B. 1947, State University of	Va.
B.S. 1943, Harvard University		Iowa	N.Y.
Townsend, Woodrow Emory	Md.	Tripp, Robert Jefferson	
Townsend, Harrison Sterling	Md.	Trippi, Frank Thomas	Ill.
Townsend, John Benjamin	N.Y.	A.B. 1949, Brooklyn College	
Towsley, M. Henrietta		Triska, Ralph Francis	Md.
A.B. 1941, Mount Holyoke College		B.S. 1948, Purdue University	Va.
Toxen, Arnold Martin	D.C.	Tritabough, Kenneth Franklin	D.C.
Tozier, Alvin Ozer	Maine	Trites, Robert Thomas	D.C.
Traband, Sara Lucille	Md.	Tritle, Richard Reed	Va.
B.S. 1948, University of Maryland		Trittipoe, Howard Randolph, Jr.	D.C.
Trachtman, Gilbert Marvin	N.Y.	Trittipoe, William Jennings	
A.B. 1949, Brooklyn College	N.Y.	Triviz, Edward Ernest	
Tracy, John Joseph	Mo.	A.B. 1942, New Mexico College of	
Tracy, Patricia Alvine	Pa.	Agriculture and Mechanic Arts	
Trail, Florence Ann	Kans.	L.L.B. 1949, The George Washington	
Trail, Martha Rothwell	D.C.	University	Md.
Trail, Mary Margaret	Wyo.	Tron, Charles Edmond	Va.
Trail, Red Clinton	Md.	Tron, Robert Augustus, Jr.	N.Y.
Trainer, Robert Frazer	Va.	Troop, Glenwood Samuel, Jr.	Va.
Trainham, Eliza Hunter		Troop, Harrison Donald	Va.
B.S. 1928, College of William and		Tromer, Margaret Penrose	D.C.
Mary		Trotter, Thomas Kenneth	N.Y.
Trainor, George Edward, Jr.	R.I.	Trought, Walter Kay, Jr.	D.C.
Trainor, James Herbert	Pa.	Trovato, Grace Mary	Va.
Trainor, Kenneth Edwin	D.C.	Truax, Allan Bishop	
Trainer, Mabel Oakley	Wis.	Truworthy, Orson William	
Tralka, George Anthony	N.Y.	B.S. 1946, Wilson Teachers College	
B.S. 1942, Georgetown University		A.M. 1949, The George Washington	D.C.
Tranoun, Lucile V.	D.C.	University	Va.
A.B. 1932, College of William and		Truhe, Wallace Peter	R.I.
Mary		Trumbo, Shannon Cromer	
Trapp, Madie Irene	N.Y.	Trumbull, Robert Gay, Jr.	
Trapp, William Max	D.C.	A.B. 1949, The George Washington	Ill.
Travallin, Constance	Va.	University	D.C.
Travaglini, Vincent D.	Va.	Trumper, Mary Madeline	
Traver, Paul Patrick	D.C.	Trundle, David	D.C.
Travis, Charles Christopher	Va.	A.B. 1941, Western Maryland College	Va.
Traylor, James Edward	Va.	Trussell, Glen Douglas	
Traylor, Lawrence Milton	D.C.	Tryon, Joseph Lee	Ind.
Traynor, Raymond Patrick	Ohio	A.B. 1949, University of Minnesota	
B.S.S. 1948, Indiana Carroll University		Tryko, Bert Peter	China
Treadway, Leon Wesley	Va.	B.S. 1949, Georgetown University	D.C.
Treacle, Hugh Charles	Md.	Tsai, You-Chi	D.C.
B.S. 1941, University of Maryland		Tschakofske, Alfred	D.C.
Treanor, William Edward	D.C.	Tseng, Maurice Hsien-pin	Maine
Tremayne, Leonard Edward	Calif.	Tsumides, James Leonidas	
Trembelas, John Peter	D.C.		
Trentacosti, Romano Charles	N.Y.		

Tuchmann, Norman A.B. 1948, The George Washington University	Conn.	Turner, Mary Joy Turner, Mervle Hearn A.B. 1946, The George Washington University	D.C. D.C.
Tucker, Betty Kimbrough	Va.	Turner, Neta Elizabeth	D.C.
Tucker, Clyde Davis	Vt.	Turner, Ralph Edward	D.C.
Tucker, Harry Jackson, Jr.	D.C.	Turner, Russell George	D.C.
Tucker, Lyman Ray A.B. 1949, The George Washington University	Tex.	Turner, Richard Crawford	Tenn.
Tucker, Nancy June B.S. 1947, The George Washington University	D.C.	Turner, Sarah Anne A.B. 1941, Northwestern State College of Louisiana A.M. 1945, Louisiana State University	La.
Tucker, Personal Thomas	D.C.	Turner, Edward Arnold	Tex.
Tucker, Ralph M.	Nev.	A.B. 1942, I.I.B. 1948, The George Washington University	
Tuckman, Charles William	D.C.	Turney, Eugene	Va.
Tuckelshof, Robert Irwin B.S. 1948, The George Washington University	D.C.	Tuttle, Lloyd William Henry	Vt.
Tulin, Theodore Gerard	N.I.	Tweed, John Franklin	D.C.
Tull, Lawrence Emerson C.E. 1928, University of Cincinnati	Ohio	Tyler, Charles Raymond	Md.
Tull, Robert Lewis A.B. 1947, The George Washington University	D.C.	Tyles, Margaret Harriet	Kans.
Tullner, William Wirsing, Jr. A.B. 1937, Temple University	N.J.	Tyler, Ruth	Va.
Tully, Jean Alice	Va.	Tym, Leon	Ill.
Tully, John Montgomery	W.Va.	Tyner, Wanda Norman	Okla.
Tullis, Richard Edward	Ill.	Tyrell, Richard Campbell	N.Y.
Tumarkin, Janet Beverly	N.J.	Tyson, Jean Carol A.B. 1947, The George Washington University	Fla.
Tunks, Omar Alvin	Va.	Tzannes, Christ	D.C.
Tupman, Edgar Munther	Va.	A.B. 1948, The George Washington University	
Tupman, Elizabeth Spencer	D.C.		
Tupman, Wilbur Crandell B.I.E. 1949, Georgia Institute of Technology	D.C.	U	
Turner, Genevieve Frances	Kans.	Uchman, Casmer Francis	Mass.
Turner, Richard	N.Y.	Udel, Helen Leiby	N.Y.
Turno, Antonette	N.Y.	Udison, Daniel Gerald	N.Y.
Turner, Alice Atwell B.S. 1945, Mary Washington College	Va.	Udick, Leonard Woodrow	Colo.
Turner, Bernice Fielder	S.C.	Udinger, John Clark	Mo.
Turner, Ralph Joseph	D.C.	Udick, Carolyn Rose	Ill.
Turner, Charles Louis	Okla.	Udel, Stanley Zand	D.C.
Turner, Frank Leslie	Maine	Uhl, Charles Christian A.B. 1949, The George Washington University	N.Y.
Turner, Donald Lloyd	Mo.	Uhl, John Phillip	Va.
Turner, Solomon H. B.S. 1943, M.S. 1944, College of the City of New York	Va.	Udler, Theodore Clay, Jr. B.S. 1949, College of William and Mary	Va.
Turnman, Leonard Felt A.B. 1946, Randolph Macon Woman's College	D.C.	Uhlirer, Percy Edward	Calif.
Turner, David Vernon	D.C.	Ulick, Irene Joan B.S. 1941, M.S. 1946, Pennsylvania State College	Pa.
Turner, Betty Louise	D.C.	Ullatek, Henry Thomas A.B. 1947, The George Washington University	Ohio
Turner, Clarence William, Jr. B.S. in M.E. 1947, Purdue University	D.C.	Umar, Yassin A.B. 1944, The George Washington University	D.C.
Turner, Edward Clarence B.S. 1941, University of Maryland	Md.	Umhau, John B. A.B. 1949, The George Washington University	D.C.
Turner, Elizabeth Tufts	D.C.	Umstead, Lyman John A.B. 1948, The George Washington University	Pa.
Turner, Estelle Truman B.S. 1943, East Texas State Teachers College	Nev.	Unger, Howard Robert A.B. 1949, The George Washington University	D.C.
Turner, Harriet Oxford	Va.	Unkenholz, Willard Clifton B.M.E. 1948, College of the City of New York	Va.
Turner, Howard Robert	Va.	Unzaker, Roy Kenneth	Va.
Turner, Humphrey Lewis	Ga.	Uplike, Howard Arnold	D.C.
Turner, James Ellsworth	D.C.		
Turner, Malford Charles	N.D.		
Turner, Marie Louise Ralph A.B. 1944, A.M. 1949, The George Washington University	Md.		
Turner, Mary Carolyn	Ill.		
Turner, Mary Johnston	D.C.		

Uphoff, James Harold	Va.	Vandenbergh, Ann	Netherlands
Upton, Emily Frances	Md.	Vandenbergh, Martin Aloysius	Pa.
B.S. 1942, University of Maryland		Vander-Hyden, Jay Henry	Va.
Upton, Lillian Beattie	Mass.	Vandermause, Orville Joseph	D.C.
Uransky, Norman A.	Va.	Ed.B. 1941, Wisconsin State	
A.B. 1947, Oberlin College		Teachers College, Whitewater	N.Y.
Urban, Mary Emily	Iowa	Vanderpol, Jack	
Urrutia, Carlos A.	Guatemala	A.B. 1948, The George Washington	
A.B. 1949, University of Dayton		University	D.C.
B.C.E. 1944, Colegio de Infantes		Van Densen, John TenEyck	
Usery, Harry M. Rae	Va.	A.B. 1938, Brown University	Fla.
Ustun, Semih Aydemir	D.C.	Van De Water, Malcolm Stuckle	Calif.
Uzzell, Edward Foy, Jr.	N.J.	Van Dusen, Charles Albert	Norway
B.S. 1949, University of North		Vang, Turid	Va.
Carolina		Van Gerdil, Lewis George	
		B.S. 1931, Pennsylvania State	
		Teachers College, Mansfield	D.C.
		Vangstal, Taven	Neb.
		Van Horne, Carolyn	Neb.
		Van Horne, Dorothy Kathryn	Neb.
		Van Horne, May	Conn.
		Van Hursten, Alice Joy	D.C.
		Van Hynning, Bernice	
		B.S. 1930, University of Minnesota	D.C.
		Van Hynning, Nancy Clayton	N.Y.
		Van Kleeck, Nelson Leeds	
		B.S. 1941, University of Virginia	Va.
		Van Meter, Ellsworth Evans	
		A.B. 1912, Indiana State Teachers	
		College	
		Van Meter, Mae Brown	Va.
		B.S. 1931, Madison College	Mich.
		Van Metre, Albert G.	
		Vann, Clarence Houston	Md.
		B.S. 1947, Wayne University	N.J.
		Vann, Maurine Elizabeth	
		Van Nimwegen, Leonard	
		A.B. 1949, The George Washington	
		University	Va.
		Van Nostrand, Oakley W.	
		B.S. 1934, University of Pennsylvania	Va.
		Van Riswick, Guy Everett	N.M.
		Van Sanford, Gordon Myron	
		A.B. 1949, The George Washington	
		University	Va.
		Van Scoyoc, Gardner Warren	D.C.
		Van Sickler, Aubrey Norris	
		A.B. 1910, The George Washington	
		University	Va.
		Van Sickler, Francis Lake	
		A.B. 1933, University of Richmond	D.C.
		Van Slyke, James Kermit	N.Y.
		Van Staden, George Arthur	D.C.
		Van Story, James Cornelius, Jr.	
		A.B. 1948, The George Washington	
		University	D.C.
		Van Wagner, John James	
		A.B. 1949, Rutgers University	D.C.
		Van Way, Charles Ward, Jr.	
		B.S. 1924, United States Military	
		Academy	Ky.
		Vanzandt, Juanita Seny	Va.
		Varoutos, Paul George	D.C.
		Varra, Evelyn Eileen	D.C.
		Varvarevoss, Yvonne	D.C.
		Vanque, Martha McKay	
		Vase, Richard Branson	
		A.B. 1940, The George Washington	
		University	Ky.
		Vaughan, Joseph Harrison	N.Y.
		Vaughan, Kenneth Lang	

V

Vaccaro, Camillo Jimmie, Jr.	D.C.
Vache, Barbara Marie	Ohio
A.B. 1949, The George Washington	
University	
Vahouny, George Varkes	Va.
Vail, Benjamin Anthony	Va.
A.B. 1940, West Liberty State	
College	
Vain, Neal John	Va.
Valdemar, Ruby W.	Va.
B.J. 1932, University of Missouri	
B.S. in Ed. 1936, Central Missouri	
College	
Valdez, Margaret	N.M.
Valencia, Abelardo Del Rosario, Jr.	D.C.
Valentine, Albert Harry	Md.
Valentine, Gordon Kenneth	Mo.
Valentine, Raymond Lee, Jr.	D.C.
Valentina, Philip Endicott	D.C.
Valentino, Joseph Peter	Va.
B.S. in C.E. 1938, Alabama	
Polytechnic Institute	
Valenzi, Joseph Thomas	N.Y.
Valenzi, Louise Mary	N.Y.
Valenzuela, Carlos Alberto	D.C.
Valerin, Arnoldo A.	D.C.
Valerius, Helen	Wyo.
Valk, Henry Snowden	Md.
Vallance, Marie Anne	D.C.
A.B. 1947, Wellesley College	
Valler, Horace Joseph	N.J.
B.S. 1948, Colleges of the Seneca	
Valles, Fred Sylvester	Wyo.
Valliant, T. Robert	Va.
Valone, Francis Paul	N.Y.
B.S. 1948, Union College and	
University	
Valui, Joseph John	D.C.
Van Allen, Peter	D.C.
Van Allen, Roland Louis	Va.
Van Briggie, Robert Dallas	Mo.
A.B. 1940, The George Washington	
University	
Vance, Catherine Peter	D.C.
Vance, Harold Parker	Md.
Vance, Henry Breckinridge	Md.
A.B. 1948, Washington and Lee	
University	
Vance, John Thomas	Md.
A.B. 1947, Montana State University	
Vance, Lucy	W.Va.
Vance, Nelson Carr, Jr.	D.C.
Van Davery, Georgiana T.	Va.
Vandegrift, Paula Bollenbacher	D.C.

Vaughan, Leonard Walton A.B. 1949, The George Washington University	Va.	Vinaguerria, John Vincent A.B. 1939, University of Akron	Ohio
Vaughan, Margaret Ellen	Ill.	Vinet, Alton Joseph	La.
Vaughan, William John	Va.	Vinkenes, Stanley Charles	Va.
Vaupel, Versie Edith	Mo.	Vintila, Mary Jane	Del.
Vaupel, Warren Frederick	N.Y.	Viola, Gennaro	N.Y.
Vavy, Willis L.	Md.	Violet, Ernest Randolph, Jr.	Md.
Vawter, Henry Alexander	Va.	Violette, Thomas Paul	Va.
Vayda, George Thomas	N.J.	Virdin, Donald Odell	Del.
Vayro, Harry Peckham	Md.	Vire, Howard Francis	Ill.
Vasquez, Antonio Eduardo	D.C.	A.B. 1947, Oakland City College	Va.
Vasquez, Bernardino	D.C.	Virta, Earl Edward, Jr.	D.C.
Veihmeyer, Frank Xavier	D.C.	Vitale, Guy	N.I.
Veihmeyer, Louise	D.C.	Vitale, Michael Joseph	D.C.
A.B. 1950, The George Washington University		Vitale, Samuel Francis	Pa.
A.M. 1946, Columbia University		Vitale, William Victor	D.C.
Vetch, Stephen William	N.M.	Vitez, Thomas George	
A.B. 1949, University of New Mexico		B.B.A. 1949, College of the City of New York	D.C.
Venables, Harry Robert	Md.	Vitiellus, Joseph Bruno	D.C.
A.B. 1949, University of Missouri		Viverette, Pearl Marie	D.C.
Venezky, Edith Rita	D.C.	Vivion, Charles George	Wyo.
Venezky, Milton Saul	D.C.	Vivori, William Frank	D.C.
Venick, Jacob	Pa.	Vizzard, William Raymond	Calif.
Venise, Anthony	D.C.	B.S. 1949, University of San Francisco	
Vera Cruz, Camilo Garcia	D.C.	Vleck, Myron Edward	N.J.
Verbits, Albert	Pa.	B.S. 1943, The George Washington University	Va.
A.B. 1949, Pennsylvania State College		Vliet, Leland Arthur	
Vergine, George Herman	Va.	A.B. 1943, The George Washington University	
Verta, James	N.J.	Vodpel, Jack Clare	D.C.
Vertner, Edmund Kearny, Jr.	Va.	A.B. 1948, The George Washington University	
Vespole, Michael James	N.Y.	Vogel, Bertram Marvin	D.C.
Vest, Stanley Jay	D.C.	Vogel, Christine	D.C.
Viccolio, Nancy Blair	Va.	A.B. 1948, University of Southern California	
A.B. 1934, Meredith College		Vogel, George Paulos	D.C.
A.M. 1939, University of Virginia	D.C.	Vogel, Millicent Jeanne	D.C.
Vicino, Dominic Joseph	Va.	A.B. 1947, Indiana University	D.C.
Vick, Billy McGuire	Va.	Vogel, Morton Schrader	Calif.
Vick David Franklin	Md.	Vogel, Ralph Henry	
Vickers, Doug Hester		B.S. 1946, Harvard University	N.Y.
A.B. 1948, University of Richmond	Calif.	Vogel, Seymour	Ohio
Vickers, Olin Dalton	Va.	Vogelhuber, George Curtis, Jr.	
Vieary, Alan Hugham	Va.	B.S. in Ed. 1937, Ohio State University	
Vieno, Howard Morton	D.C.	Vogt, Allan Frederick	Md.
Vigor, Stanley Francis		B.S. 1947, Lebanon College	Md.
A.B. 1949, Dickinson College	Puerto Rico	Vost, George Frederick, Jr.	Ohio
Vidal, William	N.Y.	Volan, Randolph Herbert	Pa.
Vidmar, Joseph Ernest		Vollmer, Charles David	Md.
A.B. 1947, New York State College for Teachers, Albany		Vollmer, Betty Jane	Md.
B.S. in I.S. 1946, Louisiana State University		Volschan, Tamara Paula	
Vienham, Wilfred Clifford	Va.	B.S. 1948, College of Notre Dame of Maryland	Va.
Vier, William Frederick, Jr.	Md.	Von Ritter, Sadie Irene	Wis.
Vine, Rex del Lamoit	Calif.	Von Ruden, Marian Ann	D.C.
Vincent, Helen Anne	D.C.	Vorbach, Charles Frederick	M.I.
Vincent, Jose Ramon	Puerto Rico	Voris, Anna Maybelle	N.M.
Vincent, Edward Edwin	Fla.	Voss, Freda Alice Montgomery	D.C.
Vincent, Charnarong	Siam	Voulgaris, Kristallo	D.C.
Viken, Lorraine M.	Ill.	Vrahiotes, Peter	N.Y.
Villa, Claude Robert	Pa.	Vroom, Oliver Evans	
Vinson, Edward Gonzales	D.C.	A.B. 1948, The George Washington University	
Vitellaise, Jean	D.C.		
Vitella, Gerald Anthony	D.C.		
Vitella, Joan A.	D.C.		
Vinaguerria, Chamsoon	D.C.		
Vincent, Francis Everett	Va.		
Vincent, John Elmer	D.C.		
B.S. in Ed. 1948, Pennsylvania State Teachers College, Millersville			
		W	
		Woolkes, Teunis Philip	D.C.
		B.S. 1947, Hope College	
		Ph.D. 1945, Ohio State University	

Wachtel, Arthur	N.Y.	Walcott, Shirley Ann	D.C.
Wachtel, Irma Schocken	N.Y.	B.S. in Ed. 1948, Wilson Teachers College	D.C.
A.B. 1944, Columbia University		Walczak, Bronislaw Stanley	D.C.
A.M. 1946, Cornell University		Wadden, Mary Sanders	Md.
Wacker, Stella Czuba	Md.	Waldman, Eric	
A.B. 1937, Ohio State University		Ph.D. 1938, University of Vienna, Austria	W.Va.
Wacker, Warren Ernest Clyde	Va.	Waldo, George Albert	D.C.
Waddell, Guy Post	W.Va.	Waldron, David Louis	Va.
Waddell, Harold Newton	Ga.	Waldron, Mattie Alice	Is.
LL.B. 1928, Atlanta Law School		Waldron, Richard Vernell	
Wadingham, Albert Thorpe	Utah	Ed.B. 1928, Southern Illinois University	Md.
Wade, Charles Joseph	D.C.	Waldrop, Francis Neil	
Wade, Clarence, Jr.	Va.	A.B. 1946, University of Minnesota	D.C.
Wade, Norma Courtney	D.C.	Waldstein, Anne Marie	Mo.
Wade, Richard Rudolph	Ohio	Walden, John Fred	Pa.
A.B. 1948, The George Washington University		Walinsky, Edward Pius	Va.
Wade, Robert Lee	Calif.	Walker, Roger Arkenson, Jr.	
Wade, Susabelle	Tenn.	A.B. 1946, Princeton University	Md.
A.B. 1937, Siena College		Walker, Alice Elaine	
Wadleigh, John Russell	D.C.	A.B. 1947, The George Washington University	D.C.
Wadlow, Anne Yvonne Mary	D.C.	Walker, Brent Friend	N.M.
Wadman, Alton Justin	Md.	Walker, Dale Bryan	Va.
B.S. 1940, Massachusetts Institute of Technology		Walker, David Stewart, Jr.	
Wadsworth, Dorothy Mae	Pa.	B.S. 1946, Villanova College	D.C.
Wadsworth, James Leo	Nev.	Walker, Eleanor Anne	D.C.
A.B. 1948, Brigham Young University		Walker, Genevieve Marie	D.C.
Waffle, Frances Jane	D.C.	Walker, George Allen, Jr.	Pa.
Waffle, Ferris Bleight	Va.	Walker, George Edward	D.C.
B.S. 1932, College of William and Mary		Walker, George Russell	Ky.
Wagener, Grace Carole	D.C.	Walker, Isabelle Pennington	
Wagener, Carmen Dolores	Md.	A.B. 1944, Centre College of Kentucky	Ind.
Wagman, Barbara Joseph	D.C.	Walker, James Kenneth, Jr.	D.C.
Wagman, Theodore David	Mass.	Walker, John Robert	D.C.
A.B. 1939, A.M. 1940, Boston University		Walker, John Sherman Brittain, Jr.	Tex.
Wagner, Carlene Patricia	N.Y.	Walker, John William	Md.
Wagner, Eugene Edward	Pa.	Walker, Kase An	Va.
Wagner, Frank Conrad, Jr.	Mo.	Walker, Louise Leahy	N.Y.
Wagner, Glenn DeWitt	N.Y.	Walker, Minnie	Va.
A.B. 1942, Syracuse University		Walker, Michael Jerald	Mo.
Wagner, Glen Edward	Pa.	Walker, Russell Louis	Mo.
B.S. in Ed. 1932, Pennsylvania State Teachers College, West Chester		Walker, Thomas Jefferson	Kent.
Wagner, Harry Lorne	D.C.	Wall, Conrad Grey	Pa.
Wagner, John Oliver	Va.	Wall, Harvey Ruben	Tenn.
Wagner, John Robert, Jr.	Md.	Wall, Stanley James	D.C.
Wagner, Joseph Albert	Pa.	Wallace, Bernice Virginia	
Wagner, Richard	Va.	Wallace, Gertrude Haysbottom	
B.S. 1927, United States Naval Academy		B.S. in Ed. 1927, Western Reserve University	Ala.
A.M. 1949, The George Washington University		Wallace, James David, Jr.	Md.
Wagner, William Francis	N.Y.	Wallace, Julia Christobel	Ky.
A.B. 1947, Cornell University		A.B. 1948, University of Mississippi	Va.
Wayner, Mary Maxine	W.Va.	Wallace, Ira Robert	
A.B. 1947, Salem College, W.Va.		Wallace, Myra Grant	Va.
Wayshal, Jerome Stanley	D.C.	A.B. 1927, University of Utah	
Waxman, Charles	N.Y.	Wallace, Walter Harold	Pa.
Waibel, Grace Theodora	Minn.	A.B. 1937, West Virginia University	
A.B. 1944, College of St. Catherine		Wallace, William Tearle	D.C.
Wanger, Jack	D.C.	A.B. 1940, Pennsylvania State College	Va.
A.B. 1947, The George Washington University		Wallack, Charles Frank	Va.
Waite, Nancy Jane	D.C.	Wallen, Andy Howard	D.C.
Waite, Sumner	D.C.	Waller, Eustace Conway Moncure	
A.B. 1911, University of Maine		Waller, F. Ford	D.C.
Wake, Charles Louis	Calif.	A.B. 1949, University of Kentucky	W.Va.
Wakefield, Walter Frederick	D.C.	Waller, Lloyd Arthur	D.C.
Walbridge, Robert Bernard	D.C.	Walley, George, Jr.	
		Wallick, Robert Daniel	Mo.
		B.S. in E.E. 1948, B.S. in B.A. 1949, Lehigh University	
		Walla, Edward Lowry, Jr.	

Walp, Lois A.	Pa.	Ward, Albert Preston	Va.
Walsh, Alice Edmonds	D.C.	B.S. 1949, Pennsylvania State Teachers College, Shippensburg	
Walsh, Charles John, Jr.	Md.	Ward, Alfred Gustave	Ala.
Walsh, Francis Joseph	Mass.	B.S. 1942, United States Naval Academy	
A.B. 1946, L.L.B. 1949, Harvard University		M.S. 1947, Massachusetts Institute of Technology	
Walsh, James Franklin	D.C.	Ward, Coy Deoma	Tex.
B.S. 1946, University of Illinois		Ward, Edward Francis	D.C.
Walsh, James Joseph	Conn.	B.S. 1946, The George Washington University	
Walsh, Joseph Francis	D.C.	Ward, Glenn Richard	D.C.
B.S. 1949, Boston University		Ward, Harold Norvin	D.C.
Walsh, Josephine Ann	D.C.	Ward, Harry Joseph	D.C.
Waler, Lawrence John	Mich.	Ward, Herman Metcalf	Va.
Walsh, Yvonne Anne	D.C.	Ward, John Albert, Jr.	Tenn.
A.B. 1949, Catholic University of America		Ward, John Wesley	Wash.
Walsten, Carl John Edward	Va.	Ward, Patricia Bond	D.C.
Walter, David Eberhardt	D.C.	Ward, Paul Andrews	
A.B. 1923, Lycée Francaise, Alexandria, Egypt		A.B. 1948, Municipal University of Omaha	
A.M. 1924, St. Etienne, Marseilles, France		Warden, Bartlett Stryker, Jr.	Va.
Ph.D. 1926, Technische Hochschule, Berlin, Germany		Warden, Frances Rodeway	D.C.
Walter, Elmer Herman	Minn.	A.B. 1937, The George Washington University	
Walter, Hans Frederick	Md.	Warden, Imogene	Md.
Walter, Katharine Miriam	Md.	Wardlaw, Gladys Anne	D.C.
B.S. 1944, The George Washington University		Wardlaw, Virginia Clyde	D.C.
Walter, Mammoth Collins	Va.	Wardrip, Schuyler Clark	Va.
A.B. 1940, East Carolina Teachers College		Ware, Frances Lee	Ky.
Walter, Richard Henry	D.C.	A.B. 1940, University of Louisville	
Walter, Wilfred Aves	D.C.	Ware, Leona Pichel	Va.
B.S. 1943, United States Naval Academy		Ware, Lloyd Robert	Mass.
Walters, Elizabeth Anne	D.C.	Ware, Robert Stephens	D.C.
Walters, Elvin Wilfred	Pa.	Wareing, Richard Berleish	Ohio
B.S. 1949, Lebanon Valley College		Warfield, John Bonkessodje	Md.
Walters, Noah Heber	N.C.	Warfield, Richard Myers	Va.
Walters, William Ruric	W.Va.	A.B. 1948, The George Washington University	
A.B. 1945, West Liberty State College		Warfield, Roy Anthony, Jr.	D.C.
Walting, Paul John	Pa.	Watkins, Lawrence John	D.C.
A.B. 1949, Pennsylvania State College		Watnick, William Davies	D.C.
Walton, Doris Presser	N.C.	Warner, Bernard Henry III	Md.
Walton, Herbert James	Va.	R.E.F. 1946, Yale University	
A.B. 1948, John B. Stetson University		Wattier, Constance Philpott	D.C.
Walton, Howard Lucy, Jr.	D.C.	Wattier, Dennis Wallace, Jr.	D.C.
Walton, John Fisher	D.C.	Wattier, Gerald Lee	Va.
Walton, June Dahne	D.C.	Wattier, Heidi L.	D.C.
Walton, Thomas Snyder	Md.	Wattier, Joan Carol	
B.S. 1945, The George Washington University		B.S. 1947, Duquesne University	Va.
Walworth, Kathleen Ann	Va.	Wattier, Philip Lambert	Va.
Wambach, Richard Fidelias, Jr.	N.D.	A.B. 1948, American University	
A.B. 1948, Duke University		Wattier, Quentin Baxter	
Wampler, Frederick Francis	Va.	L.L.B. 1947, Chicago-Kent College of Law	Va.
A.B. 1947, Bridgewater College		Warner, William Clifton	
A.M. 1948, The George Washington University		A.B. 1949, The George Washington University	Ky.
Wampler, Paul Edward, Jr.	Ind.	Warwick, Betty Jane	
Wanamaker, George Ernest	Tenn.	A.B. 1946, Marshall College	
Wandel, Fred C.	N.Y.	A.M. 1949, University of Kentucky	N.C.
B.S. 1945, M.S. 1948, College of the City of New York		Warren, Howard James	D.C.
Wandel, Marie F.	N.Y.	Warren, Margaret Elizabeth	D.C.
B.S. in Ed. 1941, College of the City of New York		Warren, Mary Lowell	D.C.
Wang, David I. Jaw	D.C.	Warren, Thomas Francis	Pa.
Wang, Teng Fu	Md.	Warren, Virginia Caroline	D.C.
Wang, Elliotte Cullen	Va.	Warren, William Wallace	D.C.
		Warren, William	D.C.
		Warren, Thomas Vernon	
		B.S. 1949, Washington College	
		A.M. 1949, The George Washington University	

Washington, Fielding Lewis LL.B. 1949, The George Washington University	Va.	Weatherbee, Harvard Yelland B.S. 1948, University of Denver	Mich.
Washom, Paul Stephen Wasilewski, Joseph Clarence B.S. 1940, Pennsylvania State College	Md. Pa.	Weathers, Milledge Wright A.B. 1949, The George Washington University	Ga.
Wasileski, Regina R. Wasmuth, Karl Edward, Jr.	Pa. N.Y.	Weaver, Douglas Price A.B. 1948, The George Washington University	Iowa
Wasser, Frances Rothberg A.B. 1947, The George Washington University	D.C.	Weaver, Frank Lloyd, Jr. A.B. 1947, The George Washington University	Mich.
Wasserman, Selma Wasson, Robert Venison Watanabe, Kazuo	D.C. Md. Hawaii	Weaver, Frederick Lehman Weaver, Gilbert Earl A.B. 1947, Lenox Rhine College	Neb. N.C.
A.B. 1948, University of Hawaii		Weaver, Henry David, Jr.	Va.
Waterman, Rich Leeman	D.C.	Weaver, Patricia Ann	N.Y.
Waterman, Samuel B.S. 1948, Cornell University	Md.	Weaver, Robert Nelson	D.C.
Waters, Frances Willard A.B. 1931, A.M. 1932, University of Oklahoma	Va.	Webb, Anne Snyder A.B. 1948, Shepherd College	W.Va.
Waters, George Leonard B.S. 1935, M.S. 1940, University of Illinois	Ill.	Webb, Claude Anderson, Jr.	Va.
Waters, Hugh Richard Waters, Raymond Joseph Watford, Frankie Hillery	D.C. N.Y. Ga.	Webb, Constance Ann	D.C.
Watken, Rosa Lee A.B. 1944, Western Maryland College	Md.	Webb, George Jerome	Mo.
Watkins, Cleveland Foster	Md.	Webb, Jack Bassett A.B. 1948, University of Kansas	D.C.
Watkins, Harold Stanley	Va.	Webb, Joseph Coates, Jr. A.B. 1948, The George Washington University	Ohio
Watkins, Henry Lee	Md.	Weber, David Joseph Weber, Edward Robert B.S. 1944, Wisconsin State Teachers College, La Crosse	Wis.
Watkins, James Edward	Va.	B.B.A. 1948, University of Wisconsin	Mass.
Watkins, Jeanene	Va.	Weber, Franklin Taylor	N.Y.
Watkins, John M.	Va.	Weber, Harry	Va.
Watkins, Norma Eileen	D.C.	Weber, Mildred Catherine	Va.
Watkins, Peggy Jane	Md.	Weber, Paul B.S. 1947, The George Washington University	D.C.
Watkins, Philip Lewis	D.C.	Weber, William John	Me.
Watkins, William Henry B.S. 1948, University of Maryland		Weber, Clark Gibbons	Me.
LL.B. 1949, The George Washington University	Fla. N.Y. Tex.	Weber, Edward B.S. 1942, University of Maryland	Ind.
Watkins, William Tatum	Md.	Weber, John Clyde	D.C.
Watson, William Leslie Peter		Weber, John Mark B.S. 1942, University of Minnesota	
Watson, Reulah Elizabeth		LL.B. 1947, The George Washington University	Me. D.C.
Watson, Bruce Parish LL.B. 1947, The George Washington University	D.C.	Webster, William Harley	Neb.
Watson, Evan William	D.C.	Wedemeyer, Robert Dale	Md.
Watson, Gerald Ickov	D.C.	Wedge, John William, Jr.	
Watson, Henry Bartlett	Md.	Wedgeworth, May A.B. 1948, The George Washington University	D.C.
Watson, James Angus III	D.C.	Wedgeworth, Ola Frances B.S. 1937, George Peabody College for Teachers	Ind. D.C.
Watson, John Monroe	D.C.	Wedler, Arthur, Jr.	
Watson, Norman Edward James	Va.	Weed, Norman Broadwell A.B. 1938, Stanford University	Md. N.Y.
Watson, Robert Carlyle	Va.	Weeder, Gilbert Louis	D.C.
Watson, Vera Virginia A.B. 1940, West Virginia University	Va.	Weeks, Harold Eugene	Va.
Watt, Richard Albert	Maine	Weeks, John Dwight	
Wauah, Carolyn Lydia A.B. 1940, The George Washington University	Ill.	Weeks, Mary Charlotte A.B. 1942, Madison College	Md. D.C.
Wauah, Perry Eugene	D.C.	Weeks, Patricia Dwight	Tex.
Wauah, Richard Alvin	Wis.	Wegman, Chester George	
Wauson, Richard	Pa.	Welmeyer, Donald Arthur A.B. 1946, LL.B. 1947, University of Texas	D.C.
Way, Joseph Dale	D.C.	Wei, Dorothy	
Waybright, Robert Lee	Va.		
Wayland, Clarence Raymond	N.Y.		
Wayne, Raymond Val, Jr.	W.Va.		
Ways, Douglas Arthur	D.C.		
Weare, George Cabot A.B. 1947, University of Maryland	D.C.		
Weasner, Charles Brent			

Weidenbaum, Murray Lew B.B.A. 1948, College of the City of New York A.M. 1949, Columbia University	N.Y.	Welch, Dorothy May B.S. in Ed. 1946, Massachusetts State Teachers College, Salem	Mass.
Weigand, Robert Joseph	N.Y.	Welch, George, Jr.	D.C.
Weimer, David Blair	D.C.	Welch, Hubert Mason	D.C.
Weimer, Lorraine Mellon	Va.	Welch, June Curtis	Tex.
Weinberger, Elias	N.Y.	Welch, Michael Crawley	D.C.
Weinberger, George	Va.	Welch, Philip Pindell	D.C.
Weinert, Arla Elaine A.B. 1942, M.P.A. 1947, Wayne University	Mich.	Welch, Philip Pindell B.S. 1948, United States Naval Academy	Va.
Weingarten, Hyman	N.Y.	Weld, Dorothy Anne	Ohio
Weingrad, Richard Herbert	N.Y.	Weldy, Pauline	N.J.
Weinreb, Thelma Beatrice	D.C.	Welker, June Pearl	Va.
Weinrich, Lee Wallace	Ohio	Welles, Richard Henry	Md.
Weinstadt, Herbert Seymour	N.Y.	Wellford, Mary Jean A.B. 1948, Randolph-Macon Woman's College	Va.
Weinstein, Harvey Harold	D.C.	Wellinger, Pearl Brittingham A.B. 1941, College of William and Mary	D.C.
Weinstein, Robert Earl	N.C.	Wellington, Benjamin	Va.
Weinstein, Samuel	D.C.	Wellington, Mervin Webber A.B. 1941, Brown University	
Weintraub, Irwin George B.S. 1949, College of William and Mary	N.Y.	Wellington, Mervin Webber Ed B. 1949, Rhode Island College of Education	N.Y.
Weintraub, Leo	D.C.	Wellington, Peretz	D.C.
Weintraub, Leo Martin	N.Y.	Wellman, Wayne Eugene	Md.
Weintraub, William Chodoff	D.C.	Wells, Clinton Fisk, Jr. B.S. 1948, University of Maryland	D.C.
Weisberg, Alan Stanley	D.C.	Wells, Delbert Eugene, Jr.	D.C.
Weisblat, Abraham Melvin A.B. 1949, New York University	D.C.	Wells, Dorothy Jones	D.C.
Weisblatt, Irving	D.C.	Wells, Edmund John, Jr. B.S. 1948, The George Washington University	Ohio
Weisbrod, Fred Edgar	D.C.	Wells, Edmund C.	Ind.
Weise, Allen Gardner B.S. 1948, The George Washington University	Md.	Wells, Frank Hobbs	D.C.
Weiss, Ernest Lyman B.S. 1932, The George Washington University	D.C.	Wells, Frank Jefferson	Va.
Weissgerger, Leo Bernard	D.C.	Wells, Glenn Sherman B.S. in Ed. 1949, Madison College	S.D.
Weiskopf, Paul David	Pa.	Wells, Gordon Clifford	Va.
Weiss, Alfred Rudolph	D.C.	Wells, Harry Eugene	Va.
Weiss, Alma Brender A.B. 1947, University of Maryland	D.C.	Wells, Martin William B.S. 1949, Miami University	Ky.
Weiss, Kenneth Floyd	D.C.	Wells, Rebecca Rose	Va.
Weiss, Leona M. M.S. 1948, University of Wisconsin	Iowa	Wells, Richard Glenn	Mich.
Weiss, Norman Reuelin	D.C.	Wells, Robert Owen, Jr.	Wn.
Weiss, Peter Louis	D.C.	Wells, Charles George B.S. 1949, University of Wisconsin	D.C.
Weiss, Robert Jerome A.B. 1949, University of Rochester	N.Y.	Wells, Fletcher Harvey	Va.
Weiss, Rowena B.Ch.E. 1949, Catholic University of America	D.C.	Wells, Helen S.	Tex.
Weiss, Samuel	D.C.	Wells, James William A.B. 1949, The George Washington University	D.C.
Weiss, Wallace Hartman	D.C.	Wells, Joseph Marshall	Va.
Weiss, William	N.Y.	Wells, Mary Kathleen	Md.
Weiss, William A.B. 1948, The George Washington University	N.Y.	Wells, Thomas William, Jr.	Pa.
Weisser, Lawrence Matthew	Va.	Wendell, Elizabeth Mary	Va.
Weissinger, Phyllis Bate	D.C.	Wendell, Harold Gilbert	Md.
Weissman, Milton P.Ch.E. 1949, New York University	N.Y.	Wendling, Andre Georges	Iowa
Weissmann, Max Ludwig	D.C.	Wentz, Carl Morten A.B. 1947-AM 1939, University of South Dakota	S.D.
Weizel, Elizabeth M.	Va.	Wendy, Lucile Burt A.B. 1942, University of South Dakota	D.C.
Weizel, James Russell	Md.	Wenger, Nelson Edward	Va.
Weizman, Mary Cohen	D.C.	Wenger, William Fred	Md.
Weitzner, Jay Kenneth	N.Y.	Wenner, Evelyn Winifred A.M. 1947, Johns Hopkins University	Va.
Weker, Simon Louis A.B. 1944, Harvard University	Mass.	Wenner, Gordon Blackburn	D.C.
Ed M. 1948, Teachers College of the City of Boston		Wessel, Henry Theodore, Jr. A.B. 1947, St. Johns College, Md.	Utah
Welch, Arthur Stelthorn	D.C.	Wentworth, William Glenn	D.C.
		Wentz, Jane Foster	

Wentz, Lois Mae	Va.	Wharton, Richard Henry	Ohio
Werbow, Farrell Roy	D.C.	B.S. 1943, University of Dayton	
Werner, Alice Crane	N.J.	M.S. 1946, Ohio State University	Va.
Werner, Ingeborg Esperanza	Mexico	Wheatley, Andy Clarence	
Werner, Monroe Mark	N.Y.	A.B. 1940, Trinity University	D.C.
A.B. 1948, Brooklyn College		Wheatley, Charles Howard	
Werner, Winton Willis	Minn.	B.S. in M.E. 1947, Drexel Institute of	
Wernitz, Carl Weber	D.C.	Technology	Iowa
Wert, John Wesley	D.C.	Wheaton, Richard Murray	Mass.
Wert, Thomas Fredrick, Jr.	D.C.	Wheeler, Arthur Adrian	D.C.
Werthenbruch, Marie Claire	D.C.	Wheeler, Mary Robb	
Werth, Gwendolyn Louise	D.C.	A.B. 1948, University of Kansas	Conn.
A.B. 1948, Wellesley College		Wheeler, Mary Star	
Wertheim, David Seymour	N.Y.	A.B. 1916, Wellesley College	
Wertz, Francis Dominic	Md.	L.L.B. 1949, The George Washington	Md.
Wesper, Willis Henry	N.J.	University	D.C.
Wessel, Robert Glenn	Ill.	Wheeler, Richard Paul	Nebr.
West, Alberta Anne	Pa.	Wheeler, Violente Niederhauser	
West, Alexander Lockhart	Ark.	Wherry, David Colwell	
West, Alice Amanda III	Va.	A.B. 1948, The George Washington	
A.B. 1948, University of Arizona		University	Ore.
West, Clyde Wilson, Jr.	D.C.	Whisenand, Benjamin Murray	D.C.
West, Genevieve Lillian	N.Y.	Whissen, Helen E.	Va.
West, George Bruce	Md.	Whitacre, Frank Lee	Md.
A.B. 1949, Washington and Lee		A.B. 1947, Shepherd College	
University		Whitaker, Doris Allen	
West, George William	D.C.	A.B. 1943, Southern Methodist	Tenn.
West, Guy Barnes	Del.	University	
West, Lee Everett	D.C.	Whitaker, Edward Stephen	
West, Luther Charles	Ala.	A.B. 1942, Kutztown College	Md.
A.B. 1948, Birmingham-Southern		Whitby, John Stephen	D.C.
College		Whitby, William David	D.C.
West, Mars Lee	D.C.	Whitcomb, Jack Bospham	N.Y.
B.S. 1948, The George Washington		White, Albert Carlton	D.C.
University		White, Alford Lawson	N.Y.
West, Marian Prekford	Va.	White, Doris Jean	Va.
West, Norman Ariel	Va.	White, Dorey Marvin, Jr.	N.Y.
A.B. 1949, University of Richmond		White, Everett Edward	
West, Robert Harlow	Md.	A.B. 1938, Dartmouth College	Conn.
West, Sally Frances	D.C.	White, Horace Walter	D.C.
B.S. 1949, Wilson Teachers College		White, Howard Seal	
West, William Royster	Va.	B.S. 1949, Wilson Teachers College	Nebr.
Westbrook, William Hughes	Pa.	White, Irvin Albert	
Westcott, George Godfrey	N.Y.	L.L.B. 1949, The George Washington	Mass.
Westcott, Raymond Arthur	D.C.	University	Va.
Westermann, Harland Walter	D.C.	White, James Douglas	
Westervelt, Frederic Ballard, Jr.	Va.	White, Joseph Hall	D.C.
Westfall, Henry Bryan	D.C.	A.B. 1942, American University	
Westfall, Robert Madison	W.Va.	White, Kenneth Woodward	
Westmoreland, Robert Norman, Jr.	Va.	A.B. 1949, The George Washington	Va.
Westmoreland, William Jewell	D.C.	University	D.C.
Weston, Glen Earl	Md.	White, Marian Virginia	
B.S. 1944, University of Maryland		White, Maryose Evelyn	Mass.
L.L.B. 1948, The George Washington		A.B. 1946, University of Maryland	D.C.
University		White, Marcel Lillian	W.Va.
Wetherbee, Fairland Henry	Md.	White, Robert Bellarmine	
Wetmore, Joseph O.	Conn.	White, Robert Lynn	Va.
Wetzel, Charles Maynard	Va.	B.S. 1947, Marietta College	
B.S. 1946, University of Alabama		White, Robert Pearson	Va.
Wetzel, Lawrence Bartlett, Jr.	D.C.	B.S. 1948, University of Maryland	N.Y.
Wetzel, Nancy Beatrice	D.C.	White, Virgie Franklin	D.C.
Whalen, Grace Dolores	Va.	White, Virginia Augusta	Ohio
Whalen, Helen Louise	Va.	White, William Emerson	
Whalen, James John	D.C.	White, William Melvin	
Whalen, John Bernard	Va.	B.S. 1947, The George Washington	N.Y.
Whalen, Ralph Leroy, Jr.	D.C.	University	Md.
Whaley, Mary Virginia	W.Va.	White, Willis Graham	W.Va.
A.B. 1947, The George Washington		White, Zelma Luetra	
University		Whitehart, George Washington	Calif.
Wharry, Llewellyn Russell	Ill.	A.B. 1938, West Virginia University	Ky.
B.S. 1941, Bradley University		Whitehead, Roger Donald	N.Y.
A.M. 1946, State University of Iowa		Whitehouse, William Ambrose, Jr.	
		Whiteman, Mary Catherine	

Whitener, Thomas Grady	Md.	Wier, Richard Austin	Tex.
Whitel, James Warren	D.C.	B.B.A. 1943, University of Texas	N.J.
A.B. 1943, Wake Forest College		Wieroski, Paul Martin	D.C.
J.D. 1948, The George Washington		Wiesman, Benjamin	D.C.
University		Wiggins, John Russell	Okla.
Whitel, Patricia Eileen Aylward	Maine	Wiggins, Lloyd George	D.C.
Whitel, Roy Thornton	D.C.	Wiggins, Patricia Ann	Pa.
Whitman, Ruth Blanton	Va.	Wiggins, Thomas Arthur	N.C.
B.S. 1944, Fort Hays Kansas State		B.S. 1947, Pennsylvania State College	Va.
College		Wings, Deena Newswold	Va.
Whiting, Donald Oren	D.C.	Wright, Augusta Randolph	Va.
B.B.A. 1949, University of Minnesota		Wright, Charles C. L.	D.C.
Whiting, Louise Tiffany	Tex.	Wright, Gerald Elvin	N.Y.
A.B. 1949, The George Washington		Wright, Lloyd Egan	Pa.
University		A.B. 1949, Columbia University	Mass.
Whitlock, Deane Lewis	Iowa	Wicks, Mabel Elizabeth	Pa.
Whitlock, Elmer William	Va.	Widensky, Donald Mark	Pa.
Whitman, Gretta Rae	D.C.	Wilbur, M. Maurice	D.C.
Wideman, Irving	D.C.	A.B. 1947, The George Washington	
Whitman, Jack	Pa.	University	D.C.
Whitmore, Charles Warren	Va.	Wilbur, Robert	Md.
M.D. 1947, University of Virginia		Wilbur, Glenmore A.	S.C.
Whitmore, Daniel Norman	Nev.	A.B. 1947, University of Washington	Fla.
Whitmore, Lorn Brigham	Nev.	Wilbur, George Davis	Va.
Whitmore, Mary Ursula	Mass.	Wilck, Leon Danesky	Va.
B.S. in Ed. 1945, Massachusetts		Wilcox, Andrew Reid	N.Y.
State Teachers College, Salem		Wilcox, Jessie Elma	D.C.
Whitney, Sidney Roston	D.C.	Wilcox, Robert Lynn, Jr.	Colo.
Whitney, Edwin Forrest	Ind.	Wilman, Janet	Ga.
B.S. 1946, Purdue University		Wiltway, Theodore John	
Whitney, George Ward	N.Y.	Wiles, Earl Bowles	D.C.
B.E.E. 1949, Rensselaer Polytechnic		A.B. 1947, The George Washington	Md.
Institute		University	
Whitney, Joseph Roland	Mich.	Wilsen, Harry Wesley	Mass.
B.S. 1945, University of Minnesota		Wilsen, John Krentz, Jr.	D.C.
Whitsett, Mildred	Tenn.	A.B. 1949, The George Washington	
White, Gordon Alfred	D.C.	University	Unab.
A.B. 1949, The George Washington		Wilkens, Donald Frank	Mass.
University		Wilkins, Myra Carolyn	D.C.
Whittemore, William Kittredge	D.C.	Wilkins, William Watkins	D.C.
Whittemore, John Vernon	Tex.	Wilkinson, John Kenneth	Va.
B.S. 1948, Rice Institute		Wilkinson, Mary Margaret	Va.
Whittington, Helen Vierling	Md.	Wilkinson, Phyllis Henrietta	Va.
A.B. 1948, Columbia University		Wilkinson, Richard Sterling	Md.
Whittington, James Gordon	N.C.	Wilkinson, William Beattie, Jr.	Va.
Whittington, Mary L.	Wyo.	W.P. Elizabeth Grove	Md.
Whittle, Robinson Alban	Va.	B.S. 1948, Cedar Crest College	
Whitwell, Sanford MacCallum	Pa.	Will, Fern Florence	Md.
B.S. 1944, Cornell University		A.B. 1942, The George Washington	
Whitworth, Lewis Beaman	Md.	University	Md.
Whyte, James Harrison	Mo.	Will, Oscar Vernon	D.C.
White, Richard Winfield	D.C.	Willard, James Essex Fisk	Va.
B.A.E. 1949, Catholic University		Willard, Maurice Avery	D.C.
of America		B.S. 1944, Madison College	Md.
White, Ernest Aaron	N.Y.	Willard, William Creighton	N.Y.
B.B.A. 1942, College of the City		Willax, Ralph Emerson	Hawaii
of New York		Willcox, Chester Austin, Jr.	Maine
M.B.A. 1945, New York University		A.B. 1949, Columbia University	
White, Philip Jacob	Ohio	Willett, Edwin Dexter	D.C.
White, George Stanley	Ga.	Willett, John Raymond	Md.
A.B. 1949, Emory University		A.B. 1948, The George Washington	N.Y.
Whitline, Harry F.	Mo.	University	D.C.
White, Mabel Lorraine	S.D.	Willett, Marie Louise	Md.
White, Thomas Andrew	D.C.	Williams, Albert Keith	D.C.
Whitman, Charles Louis	D.C.	Williams, Angela Mubala	
Whitman, Joseph William	D.C.	A.B. 1921, A.M. 1931, Indiana	
Whitman, John William	Pa.	University	Va.
B.S. 1949, Villanova College		Williams, Arvin Samuel	Ala.
Whitmer, W. Ralph	W.Va.	B.S. 1947, Midway College	
A.B. 1945, Shepherd College		Williams, Betty Kathryn	
Wiederspitz, Edwin Alfred	Wis.		
Wiener, Harvey	Ill.		

Williams, Bruce Harold	Tex.	Williamson, Laura Mae	Va.
B.S. 1934, Southwest Texas State		B.S. 1941, University of Tennessee	Md.
Teachers College		Williamson, Oliver Gordon	Va.
Ed.M. 1938, University of Texas		Williamson, Richard Thayne	Tex.
Williams, Catherine Spencer	Va.	Williamson, Robert Burns	Ill.
Williams, Charles Edward	D.C.	A.B. 1947, University of Texas	
Williams, Clement Grant	D.C.	Williamson, Thomas Binney	Md.
Williams, Constance Elizabeth	N.J.	Williamson, William A.	D.C.
Williams, Donald Guy	Va.	Willier, Lillian E.	D.C.
Williams, Dwight Lincoln	R.I.	Williamham, John Martin	N.Y.
Williams, Earl, Jr.	Ill.	Willis, Dawn Eliza	
Williams, Earl Thomas	Pa.	A.B. in Ed. 1945, The George	
Williams, Edith Ora	Va.	Washington University	D.C.
Williams, Elizabeth M.	Va.	Willis, Dorothy Catherine	D.C.
Williams, Elma	D.C.	Willis, Harold Robert	Va.
Williams, Frank Evans, Jr.	D.C.	Willie, Joseph Brian	Va.
Williams, Henry Newton	Tenn.	Willoughby, Nancy Sue	Md.
B.S. 1937, Middle Tennessee State		Willis, Lester Edward, Jr.	
College		A.B. 1948, University of Chicago	D.C.
A.M. 1948, University of Tennessee		Willis, Walter Cruise	Colo.
Williams, Janice Ruth	D.C.	Wilson, John Tucker	
Williams, Jeanette Kelly	N.C.	B.S. 1948, The George Washington	
Williams, John Charles	N.D.	University	N.Y.
Williams, John Marshall	D.C.	Wilson, Robert Crompton	S.C.
B.S. in Ed. 1946, Wisconsin State		Wilson, Arrah Minerva	
Teachers College, Eau Claire		A.B. 1945, University of South	
Williams, John Mitchell	Tex.	Carolina	
B.S. 1949, Texas Christian University		LL.B. 1948, University of Virginia	Va.
Williams, Josephine Andoe	Tenn.	Wilson, Aubrey Bennett, Jr.	
A.B. 1941, A.M. 1942, University		B.S. in M.E. 1947, University of	
of North Carolina		Virginia	Md.
Williams, Kendrick W.	Mich.	Wilson, Betty Louise	Va.
Williams, Lawrence Harvey	Va.	Wilson, Byron Kent	
B.S.L. 1947, University of Minnesota		A.B. 1949, Arkansas State Teachers	
LL.B. 1948, University of Colorado		College	Va.
Williams, Leonard	Pa.	Wilson, Charles Edward	Md.
Williams, Leonard John	Md.	Wilson, Charles Millard	Md.
Williams, Lurell H.	Va.	Wilson, Coleman Lee	Pa.
Williams, Margaret Goodwin	D.C.	Wilson, Dale Branch	Md.
A.B. 1941, Wellesley College		Wilson, Donald Smith	
Williams, Marjorie Louise	Md.	B.S. in C.E. 1942, Tufts College	Pa.
Williams, Marvin Edward	Tenn.	Wilson, Dyer Pinkney, Jr.	Pa.
Williams, Mary	Md.	Wilson, Edward Jay	Pa.
Williams, Mary Beach	D.C.	Wilson, Eleanor Louise	
Williams, Owen W. State	Md.	A.B. 1949, Wells College	Va.
A.B. 1948, Kalamazoo College		Wilson, Fernan Wessling	Va.
Williams, Patricia Anne	D.C.	Wilson, George Robert, Jr.	Pa.
Williams, Patricia Frances	Mich.	Wilson, George West	Ind.
Williams, Polly Teed	D.C.	Wilson, Harold Maurice	
B.S. 1948, The George Washington		A.B. 1948, A.M. 1948, The George	
University		Washington University	D.C.
Williams, Richard Edward	Pa.	Wilson, Henry Charles	D.C.
Williams, Robert George	Va.	Wilson, Henry Clay	D.C.
Williams, Robert Reynolds	Md.	Wilson, Howard	Mont.
A.B. 1945, Brown University		Wilson, Howard Eugene	W.Va.
M.D. 1947, Columbia University		Wilson, Howard Owen	D.C.
Williams, Thomas Nottingham	Md.	Wilson, James Frederick	D.C.
Williams, Thomas Richardson	D.C.	Wilson, James Howie	Md.
Williams, Wilfred Stanton	Calif.	Wilson, Janet Marie	Mo.
B.S. 1947, University of Southern		Wilson, Jesse Lee	Va.
California		Wilson, John Robert	Tenn.
Williams, Willard	D.C.	Wilson, Josephine Coleman	
Williams, William Barron	Mich.	Wilson, Julia Wales	Va.
Williams, William Sterne	D.C.	A.B. 1929, Tusculum College	
A.B. 1945, University of Utah		Wilson, June Deolan	
Williams, Woodburn Carlisle	Nev.	B.S. 1929, University of Maryland	Okla.
A.B. 1948, University of North		Wilson, Leland	D.C.
Carolina		Wilson, Leo Earl	
Williamson, Daniel Lester, Jr.	Va.	B.S. 1948, Carnegie Institute of	D.C.
Williamson, John George	Tenn.	Technology	
A.B. 1948, The George Washington		Wilson, Leonard Merle, Jr.	
University		A.B. 1949, West Virginia University	

Wilson, Louis A.B. 1940, Brooklyn College	D.C.	Winn, James Maier	Vt.
Wilson, Lynne A.	Kans.	Winn, Wendell Sterling	Md.
Wilson, Marie	Mo.	A.B. 1948, University of Missouri	
Wilson, Mary Alice	Nebr.	Winnick, Ruth Estelle	D.C.
B.S. 1919, University of Nebraska		Winslow, Richard Elliott	N.H.
Wilson, Orme, Jr.	D.C.	A.B. 1926, Amherst College	
B.S. 1942, Harvard University		M.B.A. 1938, Harvard University	D.C.
Wilson, Paul Grier	Va.	Winston, Anthony	Va.
A.B. 1950, University of Maryland		Winston, Robert Alexander	
Wilson, Paul Randolph	D.C.	A.B. 1935, Indiana University	Pa.
A.B. 1949, The George Washington University		Winston, Thomas Harry	N.Y.
Wilson, Philip Harold	Ill.	Winter, Frank Ephraim	
Ed.B. 1940, Illinois State Normal University		B.S. 1943, University of Pittsburgh	Okla.
Wilson, Raymond Boyd	Nebr.	Winter, Lewis Jasper	
Wilson, Richard Herbert, Jr.	Va.	B.S. 1940, The George Washington University	
Wilson, Ruth Elizabeth	Mo.	Winter, Philip Haywood	Md.
Wilson, Ruth Whitfield	D.C.	B.S. 1938, Wilson Teachers College	Pa.
Wilson, Thomas Edwin	Ill.	Winter, Robert Edward	Va.
Wilson, W. A. Neil	Md.	Wintermoyer, Harry Fulton	
Wilson, William Dean	Wyo.	A.B. 1944, Shepherd College	N.Y.
B.S. 1949, University of Wyoming		Winters, Wallace Dudley	D.C.
Winbrow, Charles Franklin	Va.	Winters, William Harvey	Va.
Winchell, Ralph Ellis	Okla.	Wirt, John Alvin	D.C.
Winchester, Louis Edwin	N.J.	Wischusen, Charlotte Augusta	D.C.
Windheim, Sandoe	N.Y.	Wise, Betty Jane	Pa.
A.B. 1948, The George Washington University		Wise, Robert Arthur	Md.
Windingland, Einar	N.D.	Wise, William Arthur	Va.
A.B. 1940, North Dakota State Teachers College, Minot		Wiseman, Ben Warren	
Windle, Betty Lou	D.C.	A.B. 1948, West Virginia University	Pa.
Windsor, Marshall Daniel	Va.	Wisher, Helen Ausk	Va.
Wine, Sarah	Mass.	Wimmer, Carl Edward Jr.	Va.
A.B. 1945, The George Washington University		Wiswell, Mary Anne Stevenson	D.C.
Wineberg, John Walter	Pa.	Witcomb, Sheldon William	
Wineford, Robert Kenneth	D.C.	B.S. 1940, University of Maryland	N.Y.
A.B. 1948, The George Washington University		Wittenstein, Matthew Martin	
Winer, Ben James	D.C.	B.S.S. 1940, College of the City of New York	
B.S. 1939, M.S. 1941, University of Oregon		Witham, Robert Carey	Md.
Wines, Floyd Arthur	Va.	Withers, Everett Whiting	W.Va.
Wines, Judson James	D.C.	A.B. 1947, West Virginia University	
Wines, Mildred Roof	D.C.	B.J. 1929, University of Missouri	N.C.
A.B. 1931, University of South Carolina		Withers, John Lewis	
Wine, Marie Ellen	Mich.	B.S. 1940, Davidson College	
A.B. 1948, University of Michigan		A.M. 1941, University of North Carolina	Md.
Wisp, Robert Claude	Maine	Witherspoon, Fred Lee, Jr.	
B.S. 1945, United States Naval Academy		B.S. in M.E. 1941, University of Maryland	N.Y.
M.L.A. 1940, Harvard University		Witkin, Eugene	Md.
Wingers, Earl Lester	Va.	Witkin, Lloyd Benjamin	
A.B. 1942, University of Wisconsin		B.S. 1940, Louisiana Polytechnic Institute	Mass.
Winfield, Lester Ray	Ark.	Witkowski, Walter Phillip	Md.
Ph.B. 1921, University of Chicago		Wittauer, Mary Sue	Va.
Wingo, James Scott	D.C.	Wizson, Leonard Carroll	Wis.
Wingo, Richard Brown	Va.	Wnek, George	Md.
Wingo, Shirley Dale	Va.	Wodinsky, Isidore	
B.S. 1942, University of Virginia		A.B. 1930, Brooklyn College	Pa.
Wink, Linus John	D.C.	Woelke, Arnold Benjamin	
Winkelmann, Frederick William	Va.	B.S. in Ed. 1940, Southeast Missouri State College	
Dr. Jur. 1917, University of Göttingen, Germany	N.Y.	Wofford, Clarence Arnold	D.C.
Winkler, Robert Jay	N.J.	Wofford, John Wesley, Jr.	Mass.
B.S. 1940, Stevens Institute of Technology		Woolfahan, William McNulty	N.Y.
Winkler, Joseph Fred	Md.	B.M.E. 1942, Clarkson College of Technology	
		Woodch, Francis De Sales	D.C.
		B.S. 1945, Harvard University	
		Woelke, John Oliver	Va.
		Wojtkowiak, Raymond Alfred	N.Y.
		Wojtkowski, Thomas Casmere	Mass.
		Wojtkowicz, Jan, Jr.	N.J.

Wolebick, Ruth Louise	Pa.	Wood, Charles William	Pa.
Wold, Henry Edward	D.C.	LL.B., 1949, The George Washington University	D.C.
Woff, Frank George	Md.	Wood, Edwin Charles	S.C.
Woff, Israel	D.C.	Wood, Harry Eugene	D.C.
Woff, Joseph Jay	D.C.	Wood, Jack Guy	Va.
Woff, Manuel	Wis.	Wood, James Nathan	
Woff, Norbert Joseph	D.C.	A.B., 1915, DePauw University	
Woff, Richard Marvin	Ill.	LL.B., 1918, Indiana Law School	
Woff, Verna Mae	La.	LL.M., 1942, The George Washington University	Va.
Woff, William Emmert	N.Y.	Wood, John Birkhead	N.C.
Woff, William Mathew	Calif.	Wood, John Fred	D.C.
Wolfarth, Carlton Huntington	Colo.	Wood, Julia Burton	N.J.
Wolfarth, Charlene D.		Wood, Kathleen Rose	Va.
A.B., 1941, The George Washington University		Wood, Lloyd Fuller	Va.
Wolfe, Allen Lee	Mo.	Wood, Margaret Louise	Colo.
Wolfe, Eddie	D.C.	Wood, Marron Blanche	
B.S., 1937, The George Washington University		A.B., 1946, University of Colorado	N.C.
Wolfe, Eugene Noel	W.Va.	M.S., 1948, University of Minnesota	Mo.
Wolfe, Margaret Mary	Va.	Wood, Marvin Lee	
A.B., 1941, St. Joseph's College for Women		Wood, Paul King	Md.
Wolfe, Roy Pratt	Ky.	B.S., 1912, University of Missouri	
Wolfenson, Jay Warren	D.C.	Wood, Robert Ambrose	
A.B., 1945, The George Washington University		A.B., 1948, The George Washington University	Ill.
Wolff, Catherine Jean	N.Y.	Wood, Robert Lee	Ind.
Wolff, Gerald Spaulding	Utah	Wood, Stella Draper	Ill.
A.B., 1949, The George Washington University		Wood, Thomas Bennett	Tex.
Wolff, Louis	Va.	Wood, Walter Henderson	Mass.
A.B., 1949, The George Washington University		Wood, William Joseph, Jr.	D.C.
Wolfe, Lenard Lee	Pa.	B.S., 1930, American University	Va.
A.B., 1948, The George Washington University		Wood, Willis John	N.C.
Wolfson, Harold Barnett	W.Va.	Woodall, Deana Dorothy	
Wolfson, Margaret Stella	England	Woodard, Calvin	
A.B., 1942, London School of Economics		A.B., 1949, University of North Carolina	Md.
Wolfson, Reuben	D.C.	Woodard, Frank Jones	Va.
Wolfson, Stanley William	N.Y.	Woodard, Geoffrey Dean Leroy	
B.S., 1948, Pennsylvania State College		B.S., 1937, The George Washington University	Va.
Wolk, Morris O.	Md.	Woodard, Joseph Harold	Utah
B.S., 1936, Cooper Union		Woodbury, Wallace Richards	Conn.
Wolk, Reuben	Calif.	A.B., 1947, University of Utah	
B.S., 1938, University of Maryland		Woodhouse, Margaret Wark	D.C.
Wollan, Harold Frank	D.C.	A.B., 1949, University of North Carolina	
Wollan, Harold	N.Y.	Woodhull, John Hawley	Pa.
B.S., 1942, College of the City of New York		B.S. in E.E., 1942, Tufts College	
Wolman, Pearl	D.C.	Woodling, Francis Albert	N.H.
Wolman, Sidney Stanley	D.C.	A.B., 1946, The George Washington University	Md.
Wolman, Robert	Mass.	Woodman, Philip Colby	D.C.
Wolpert, Samuel Albert	D.C.	Woodmansee, Charles H.	Calif.
Wolpoff, John Robert	D.C.	Woodring, Anne Owen	
Wolucki, Bernard Victor	Conn.	Woods, Bruce Allan	D.C.
Womack, Herman Lynn	D.C.	A.B., 1949, University of Redlands	Mass.
A.B., 1949, The George Washington University		Woods, Hailan LeRoy	Va.
Womble, John Philip	Ga.	Woods, Harold Dean	
B.S., 1930, United States Naval Academy		Woods, John George	Calif.
Wommack, Claire	D.C.	A.B., 1941, Centenary College	Va.
Wong, Hsin Ping	China	LL.B., 1949, Georgetown University	Va.
Wong, James Aubrey	D.C.	Woods, Robert Ora	D.C.
Wong, Wing	N.H.	Woodsale, Byron Crosby	
LL.B., 1949, The George Washington University		Woodward, Charles Byron	
Wood, Carolyn Diana	Md.	Woodward, John Richard	
		Woodward, Nancy Hank	
		A.B., 1948, The George Washington University	Md.
		Woodworth, Howard Hampton	Va.
		B.S., 1942, University of Minnesota	D.C.
		Woody, William Sterling	
		Wooldard, Edward Ray	

Woodbridge, William Abbitt	Va.	Wrobel, Joseph Norman	N.Y.
Wood, Bessie Harold Reginald	Va.	Wroble, Elisabeth June	Canada
Wood, Evelyn Rebecca	D.C.	W. B. 1947, University of Toronto	
Woolley, Ruth Conant	R.I.	Wroth, Ralph Lane	Pa.
Woolis, Elizabeth Burns	Va.	W. B. 1947, Kenyon College	
B.S. 1947, St. Joseph's College, Md.		Wu, George	Conn.
Woolis, Ruth Roberts	Va.	Wu, Hsu Chen	China
B.S. 1947, St. Joseph's College, Md.		W. B. 1947, Tsing-Hua University,	
Woolis, William, Jr.	Va.	Peiping	
Woolwine, Mary Catherine	Tenn.	Wulf, James Theodore	Calif.
Wosman, Wilson Kiat	D.C.	Wulf, Margaret Ann	Nebr.
Worlen, Dwight Geer	N.Y.	Wulf, Paul Elizabeth	Va.
Worlen, Hattie Trott	Fla.	Wurz, Nelson Hush	Ind.
B.S. 1939, Florida State University		Wurzer, Rose Agnes	D.C.
Worlen, Yvonne Innes	D.C.	Wyatt, John Watson	Fla.
Woringer, George Samuel	Md.	B.S.E. 1938, Alabama State Teachers	
Worley, Barbara Anne	D.C.	College, Troy	
Worley, Richard Bryce	Okla.	W. B. 1947, University of Florida	D.C.
Wormald, Marion Frances	Va.	Wyatt, Thomas Frederick	Va.
B.S. 1948, Virginia Polytechnic		Wyche, Benjamin Wasker	
Institute		B.S. 1943, Virginia Polytechnic	
Woroneff, Leonard	D.C.	Institute	
Worthington, Elaine Roberta	N.M.	Wyche, Richard Thomas	Okla.
B.S. 1949, University of New Mexico		W. B. 1938, University of Oklahoma	
Worthington, John Taliaferro, Jr.	Va.	Wyckoff, Herbert Alan	Md.
Wortman, David Morris	D.C.	Wycherley, Herbert Alan	
B.S. 1948, The George Washington		W. B. 1936, A.M. 1938, University	
University		of Pennsylvania	
Wosten, Benjamin	D.C.	Wickoff, Donald Latham	N.Y.
B.S. 1948, The George Washington		Widner, Kenneth	D.C.
University		B.S. 1947, University of Rochester	
Woulf, Benjamin Bernard	Va.	Wigod, Catherine	D.C.
Woyan, Donald Clyde	Va.	Wiley, John Washington	D.C.
Wray, James Luban	Ark.	Wynnan, Alexander	D.C.
Wray, James Ronald	D.C.	B.S. in Ch.E. 1946, Cooper Union	
B.S. 1945, M.S. 1948, University		Wynne, Charles Malcolm	Mass.
of Chicago		Wynne, Max Lee	Kans.
Wren, Donald George		B.S. in Ch.E. 1947, University of	
Wren, Marvin Robert	Mo.	Kansas	
Wright, Berkeley	D.C.	Wynkoop, Jeanne Simonds	D.C.
Wright, Carney Willis	D.C.	Wyvill, Mildred Ellen	D.C.
Wright, Clifton Woodrow	Tenn.		
Wright, Dale Alan	D.C.		
B.S. 1948, Carnegie Institute of	Tenn.		
Technology			
Wright, Dalton Houston	La.	Yabroff, Bernard	Va.
B.S. 1946, Louisiana College		B.S.S. 1939, College of the City of	
A.M. 1948, The George Washington		New York	
University		Yadao, Hsu Perleto	Hawaii
Wright, Elizabeth Truman	Va.	A.B. 1949, University of Hawaii	
A.B. 1936, Allegheny College		Yager, David Eugene	Va.
Wright, Eric Una	D.C.	Yager, Eugene F.	Va.
Wright, Frederick Grant, Jr.	D.C.	A.B. 1945, Concord College	
Wright, George Charles	D.C.	Yager, Helen Elizabeth	Va.
B.S. 1926, United States Naval		Yager, Fred Charles	D.C.
Academy		Yago, Marvin Harris	Md.
M.S. 1942, Columbia University		Yae, John Lewis	D.C.
Wright, George Brown	Md.	B.S. 1939, Columbia University	
Wright, Harold Malcolm	D.C.	Yalom, Irvin David	D.C.
Wright, Katherine Louise	Ill.	Yalom, Isidor David	D.C.
A.B. 1946, DePaul University		B.S. 1948, The George Washington	
Wright, Pauline	D.C.	University	
A.B. 1946, Bucknell University		Yalom, Ruth	D.C.
Wright, Robert Clifford	Ohio	Yamada, Shiroo	Md.
Wright, Ruth	Ky.	Yamamoto, Joan Nickel	Md.
Wright, Virginia Lucille	D.C.	A.B. 1946, Antioch College	
Wright, Wayne Alard	D.C.	Yamovky, Perihan Aziz	D.C.
Wright, William Alden	Idaho	A.B. 1942, American University of	
Wright, William Warren	Pa.	Beirut, Lebanon	
B.S. in Ed. 1949, Capital University	D.C.	Yamori, Wallace Tadao	Hawaii
Wright, Ellen Rita	Va.	Yamori, Anthony	N.Y.
A.B. 1947, University of Virginia		Yamowitz, Arthur	N.Y.
B.S. 1948, University of Illinois		Yamovich, Herbert Almon	Va.
		Yarbrough, Joseph Benjamin III	D.C.

Yarnoff, Leroy Mills	D.C.	You, James C.	D.C.
Yates, Charles Louis	Pa.	B.S. 1927, Central University, Nanking	
B.S. in E.E. 1948, Pennsylvania State College		M.S. 1919, London School of Economics	D.C.
Yates, John Russell, Jr.	Md.	Younes, William Gabriel	Ark.
Yates, William Avery, Jr.	Ga.	Young, Agnes June	Hawaii
Yatteau, John Allan	Md.	Young, Arthur Judson	Colo.
A.B. 1948, Columbia University		Young, Charles Cooper	Pa.
Yavener, Burton	N.J.	L.L.B. 1926, University of Denver	W.Va.
Yavil, Minnie	Pa.	Young, Charles Edward	N.Y.
B.S. 1937, Temple University		Young, Craig Albertus	
A.M. 1949, The George Washington University		Young, David	
Yazel, Richard Alan	D.C.	B.M.F. 1949, Cooper Union	Mass.
Yazge, Irene Elizabeth	D.C.	Young, Dorothy Priscilla	D.C.
Yeager, Margaret Oliphant	D.C.	Young, Edward Everett, Jr.	Ohio
B.S. 1942, Purdue University		Young, George Ellis	Md.
Yeager, Mary Ann	D.C.	Young, George Wesley, Jr.	D.C.
Yeager, Philip Brand	Va.	Young, Ina Marie	Va.
A.B. 1939, University of Arizona		Young, Irene Bennett	
Yeakley, Elizabeth LeGrand	Va.	A.B. 1930, College of William and Mary	Ohio
B.S. 1942, State Teachers College, Farmville		Young, Jack Martin	
Yedersham, Mario Anthony	Md.	B.S. in M.E. 1941, Case Institute	
Yednock, John Joseph	Pa.	of Technology	D.C.
Yedzianak, Michael Mloysius	Conn.	Young, Jeanne Loring	D.C.
Yee, Florence Buckia	D.C.	Young, Kharmin Hudson	W.Va.
Yee, Richard Hong	D.C.	Young, Maynard Elmg	D.C.
Yee, William	D.C.	Young, Norbert L.	Kans.
Yeels, Frank Randolph, Jr.	Tex.	Young, Norma Jean	Ohio
Yeldell, Fanny Fay		Young, Regina M.	
A.B. 1932, University of Texas		B.S. 1929, Ohio State University	
Yenchius, Mildred Mary	Md.	A.M. 1943, The George Washington University	D.C.
A.B. 1939, Ohio State University		Young, Robert	
Yevick, John George	Pa.	A.B. 1948, The George Washington University	D.C.
B.S. in E.E. 1914, Drexel Institute of Technology		Young, Robert Stanley	Va.
Yewell, Thomas Ballard	Fla.	Young, Sawyer Roger	Pa.
Yim, William Harry	Hawaii	B.Arch. 1947, Yale University	Va.
A.B. 1949, University of Hawaii		Young, Thomas William	
Yokum, Cella Marie	W.Va.	Young, Virginia Gwathmey	
Yobst, Vivian Marie	D.C.	A.B. 1947, The George Washington University	Md.
B.S. 1944, The George Washington University		Young, William Harold	Md.
Yochem, Gerard M.	N.Y.	Youngblood, Ernest Isley	Md.
Yocum, Jack	Ohio	Younger, Edward Francis, Jr.	Tenn.
B.S. in Ed. 1943, University of Oklahoma		Younger, William Edward	
Yocum, Myron Clair, Jr.	Pa.	B.B.A. 1948, University of Chattanooga	Calif.
Yohs, Douglas Herbert	Pa.	Youngman, Wilbur Hughes, Jr.	Ohio
Yokley, William Ross, Jr.	Ky.	Yosker, Lena	D.C.
Yokoyama, Fuku	D.C.	Yount, Isabelle Henkel	Ohio
Yolles, Dorothy	N.Y.	B.S. 1939, Wilson Teachers College	
York, Robert	D.C.	Yount, Joseph Herman, Jr.	Va.
York, Edgar Duane	Md.	A.B. 1948, Oberlin College	D.C.
York, Emil Conrad	D.C.	Youshaw, Myron	Va.
York, Jack	Ill.	Yowell, Arlene	
York, Lawrence Robert	Mo.	Yowell, Earl Reddish	
York, Lorette Irving	Va.	B.S. 1949, The George Washington University	N.J.
York, Ody Dee	Tex.	Yuhas, Olga	D.C.
York, Robert Lamar	D.C.	Yuill, Charles Walter, Jr.	D.C.
York, Warren Monroe, Jr.	D.C.	Yussensen, Marcella M.	Pa.
Youty, Robert Bell	Nev.	B.E. 1949, Illinois State Normal University	Md.
Yoshimura, Sei	Hawaii	Yuricek, Joseph	
B.S. 1946, University of Hawaii		Yurwitz, Julius Peter	
Yost, Charles Francis	Md.	B.S. 1938, The George Washington University	
B.S. 1947, The George Washington University			
Yost, Marguerite, Rosemary	D.C.		
Yost, Oscar Perry	Va.		
B.S. 1940, Madison College			
Yost, William Adams	D.C.		

Z

Zabiegalski, Anthony, Jr. A.B. 1949, Bucknell University	Pa.	Zervakos, Straty	Ma.
Zabitsky, Mae Lucretia		Zieg, Harry Eugene	D.C.
Zablocki, Clement John	D.C.	Ziegler, Herman Joseph	N.J.
Ph.B. 1936, Marquette University	Wis.	Ziegler, Lavern Landis	Va.
Zachary, Richard Eugene		Ziegler, Norman Gene	D.C.
Zahn, Mallory Hulty	D.C.	Ziehl, Roland Charles	Wis.
B.S. 1934, University of Virginia	D.C.	Ziehl, Wilbur Henry	Md.
Zajac, Mary Louise		Ziff, Richard Newton	Conn.
Zajac, Albert Henry	Pa.	Zigmond, Faye	D.C.
A.B. 1949, Oklahoma City University	Okla.	Zilab, Helen Josephine	Md.
Zamanaky, Eleanor Belle		Zimmer, Culver Frain	D.C.
Zamoraki, Lucien Ira	D.C.	Zimmer, David Joseph	Md.
Zanehl, Alfred	Iowa	Zimmer, Patricia Ann	D.C.
Zanoth, Raymond David	N.Y.	Zimmerman, Donna B.	D.C.
Zanoni, Canthido Peter	D.C.	Zimmerman, Harry Chalfant	D.C.
Zapl, Thomas Lane	Minn.	Zimmerman, Howard McCord	D.C.
Zaroff, Lawrence Irving	D.C.	Zimmerman, William III	Va.
Zaroff, William Joseph	D.C.	A.B. 1949, The George Washington University	
Zasada, Arthur Stephen	Va.	Zinn, Myron Bernard	D.C.
Zasada, Richard Conrad	Va.	Zinn, Robert Blaine	Fla.
Zasalicky, Julius John	Conn.	Ziobro, Stanley Robert	N.J.
B.E. 1942, Yale University		B.S. 1942, The George Washington University	
Zatz, Dorothy	D.C.	Zipin, Pearl	Ohio
Zavacky, Mary Theresa	D.C.	Zisk, Stanley Joseph	Mass.
Zayas, Edison Vladimiro	D.C.	B.S. 1942, Georgetown University	
Zazetski, Henry Bernard	Pa.	Zitomer, Joseph	D.C.
A.B. 1949, Pennsylvania State College		Zivak, John	Pa.
Zbylet, Chester Anthony	Ill.	Zook, Benjamin Martin	Va.
A.B. 1950, De Paul University		A.B. 1949, Harvard University	
Zeh, Billy Reid	Va.	Zore, Nada Ana	D.C.
Zeda, Eleanor Bessie	D.C.	Zorn, Otto Gottfried	N.Y.
Zeidner, Philip M.	N.Y.	Zubeck, John Thomas	Pa.
Zeigler, Joanna Elizabeth	D.C.	Zubeck, Theresa	D.C.
Zelaska, Ralph Rudolph	Va.	Zucker, Bertram	N.Y.
B.S. 1940, The George Washington University		Zucker, Harold Scheff	D.C.
Zelnicki, John Ward	Ariz.	Zucker, Morton David	N.Y.
Zelnowitz, Sam	Va.	Zuckerman, Martin Jay	N.J.
Zeller, George Joseph	Pa.	Zugel, Francis Kopp	D.C.
Zellermayer, Ethel	N.Y.	Zugel, Mary Jean Edna	D.C.
A.B. 1941, Hunter College	Fla.	Zuke, Walter	D.C.
Zellers, Robert Adam		B.S. 1938, Albright College	
LL.B. 1949, John B. Stetson University		Zulieve, Atele Father	Mass.
Zembrzanski, Bruno John	Va.	Zuni, Jose Abe	N.M.
Zembrzanski, Eleanor Marie	Va.	B.B.A. 1940, University of New Mexico	
Zeno, Luis Antonio	Puerto Rico	Zuppas, Simos	D.C.
A.B. 1945, University of Puerto Rico		LL.B. 1938, University of Athens, Greece	
Zenz, Robert Wilhenry	D.C.	Zurad, Bruno Hyacinth	Ill.
Zenz, Gerald Lee	Md.	Zussman, Harriett Belle	Mich.
Zereth, Mortimer Morris	D.C.	Zverina, George Francis	Md.
		Zwibel, Sidney A.	N.Y.
		Zysk, John Joseph	N.H.

SUMMARY OF REGISTRATION

1949-50

THE JUNIOR COLLEGE

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Freshmen	1,011	592	1,603
Sophomores	1,418	653	2,071
	<hr/> 2,429	<hr/> 1,245	<hr/> 3,674

COLUMBIAN COLLEGE

Juniors	345	226	571
Seniors	327	213	540
Candidates for the degree of Master of Arts....	272	120	392
Candidates for the degree of Master of Science..	67	42	109
	<hr/> 1,011	<hr/> 601	<hr/> 1,612

THE GRADUATE COUNCIL

Candidates for the degree of Doctor of Philosophy	83	18	101
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THE SCHOOL OF MEDICINE

First Year	90	4	94
Second year	82	2	84
Third year	67	8	75
Fourth year	68	10	78
	<hr/> 307	<hr/> 24	<hr/> 331

THE LAW SCHOOL

First year	800	63	863
Second year	543	30	573
Third year	448	18	466
Candidates for the degree of Master of Laws ..	202	4	206
Candidates for the degree of Master of Comparative Law	16	2	18
Candidates for the degree of Doctor of Juridical Science	12	0	12
Unclassified	43	1	44
	<hr/> 2,124	<hr/> 118	<hr/> 2,242

THE SCHOOL OF ENGINEERING

Freshmen	360	1	361
Sophomores	293	1	294
Juniors	240	1	241
Seniors	187	2	189
	<hr/> 1,070	<hr/> 5	<hr/> 1,075

THE SCHOOL OF PHARMACY

	Men	Women	Total
Juniors	41	2	43
Seniors	19	1	20
	<hr/> 60	<hr/> 3	<hr/> 63

THE SCHOOL OF EDUCATION

Juniors	50	65	115
Seniors	53	90	143
Candidates for the degree of Master of Arts.....	110	120	230
Candidates for the degree of Doctor of Education	32	10	42
	<hr/> 245	<hr/> 285	<hr/> 530

THE SCHOOL OF GOVERNMENT

Juniors	435	55	490
Seniors	304	38	342
Candidates for the degree of Master of Arts....	230	40	270
	<hr/> 969	<hr/> 133	<hr/> 1,102

THE DIVISION OF UNIVERSITY STUDENTS

University Students	3,027	1,739	4,766
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THE DIVISION OF SPECIAL STUDENTS

Special Students	1,553	325	1,878
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SUMMARY

Students Registered, Academic Year 1949-50....	17,983	6,055	24,038
Students Registered, Summer Sessions 1949.....	7,987	1,771	9,758
Total Registration 1949-50	<hr/> 25,970	<hr/> 7,826	<hr/> 33,796
Duplicate Registrations	13,091	3,330	16,421
Total Number of Students Registered 1949-50..	<hr/> 12,879	<hr/> 4,496	<hr/> 17,375

TEACHING STAFF

Professors Emeritus	20
Professors	79
Adjunct Professors	15
Professorial Lecturers	63
Clinical Professors	26
Adjunct Clinical Professors	12
Associate Professors	44
Associate Clinical Professors	3
Associates in the School of Medicine	63
Assistant Professors	57

Assistant Clinical Professors	57
Lecturers	95
Instructors	42
Clinical Instructors	193
Research Associates	3
Associates	101
Fellows	30
Technical Assistants	11

DEGREES CONFERRED

Associate in Arts.....	905
Bachelor of Arts.....	525
Bachelor of Arts in Education.....	44
Bachelor of Arts in Government.....	420
Bachelor of Science.....	91
Bachelor of Science in Engineering.....	26
Bachelor of Civil Engineering.....	29
Bachelor of Electrical Engineering.....	62
Bachelor of Mechanical Engineering.....	50
Bachelor of Science in Home Economics.....	0
Bachelor of Science in Pharmacy.....	44
Bachelor of Science in Physical Education.....	31
Bachelor of Laws.....	300
Juris Doctor	18
Master of Arts.....	70
Master of Arts in Education.....	84
Master of Arts in Government.....	50
Master of Science.....	33
Master of Comparative Law.....	4
Master of Laws.....	71
Doctor of Medicine.....	78
Doctor of Education.....	5
Doctor of Philosophy.....	7
	3,042

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

UNITED STATES, TERRITORIES, AND POSSESSIONS

Alabama	73	Illinois	182
Arizona	22	Indiana	125
Arkansas	52	Iowa	104
California	211	Kansas	84
Colorado	57	Kentucky	85
Connecticut	160	Louisiana	55
Delaware	22	Maine	40
District of Columbia.....	5,704	Maryland	1,845
Florida	151	Massachusetts	145
Georgia	111	Michigan	149
Idaho	24	Minnesota	107

Mississippi	52	South Carolina	65
Missouri	120	South Dakota	34
Montana	36	Tennessee	122
Nebraska	74	Texas	187
Nevada	32	Utah	37
New Hampshire	39	Vermont	29
New Jersey	398	Virginia	2,778
New Mexico	41	Washington	61
New York	1,170	West Virginia	228
North Carolina	188	Wisconsin	93
North Dakota	32	Wyoming	18
Ohio	287	Alaska	5
Oklahoma	83	Hawaii	42
Oregon	32	Puerto Rico	34
Pennsylvania	969	Canal Zone	1
Rhode Island	62		

FOREIGN COUNTRIES

Afghanistan	1	Iran	4
Argentina	1	Israel	2
Australia	1	Italy	1
Belgium	6	Korea	2
Bolivia	1	Lebanon	3
Brazil	2	Mexico	2
British Guiana	1	Netherlands	3
British West Indies	1	Netherlands West Indies	1
Canada	11	New Zealand	2
China	19	Norway	9
Colombia	4	Panama	1
Cuba	6	Peru	4
Cyprus	2	Philippines	13
Denmark	1	Poland	1
Egypt	3	Portugal	2
England	4	Siam	8
France	6	Sweden	1
Germany	3	Switzerland	2
Greece	2	Syria	1
Guatemala	2	Turkey	1
Hungary	1	Venezuela	2
India	16	Yugoslavia	1

ALUMNI AND ALLIED ASSOCIATIONS

THE GENERAL ALUMNI ASSOCIATION

The objects of this Association are to unite the graduates in closer sympathy and to promote the general welfare of the University. The following persons are eligible for *active* membership: graduates of any college, school, or division of the University; holders of honorary degrees from the University; and members of the Board of Trustees and of the Faculty of the University. Any person who has matriculated, who has been in regular attendance for one year, and who has left the University in good standing, is eligible for *associate* membership.

The Alumni Office is situated at 2018 I Street, Washington, D. C. Alumni are urged to keep the office informed of changes of address or occupation and to supply information with regard to their fellow alumni.

1950-51

President.—Elmer Louis Kayser, A.B. and T.D. 1917, A.M. 1918, LL.D. 1948 (Ph.D. 1932, Columbia University); 2921 34th Street, Washington, D. C.

Vice Presidents:

Columbian College.—James R. Kirkland, A.B. 1927, LL.B. 1928, LL.M. 1929 (B.C.S. 1931, Benjamin Franklin University); 1519 Underwood Street, Washington, D. C.

Graduate Council.—Orville E. May, A.B. 1924, M.S. 1926, Ph.D. 1929; 3449 Peachtree Road N.E., Atlanta, Georgia.

School of Medicine.—Russell McNitt, M.D. 1925, B.S. in Med. 1925; 1801 I Street, Washington, D. C.

Law School.—Stanley J. Tracy, LL.B. 1925; Federal Bureau of Investigation, Washington D. C.

School of Engineering.—William S. James, B.S. in M.E. 1917; Fram Corporation, East Providence, Rhode Island.

School of Pharmacy.—Harold C. Kinner, Phar.G. 1928, B.S. in Phar. 1943; 5905 Riggs Road, Hyattsville, Md.

School of Education.—Elsie Green, A.B. 1914, A.M. 1928; 3151 Tennyson Street, Washington, D. C.

School of Government.—Louise McNutt, A.B. 1943; Shoreham Hotel, Washington, D. C.

Dental School.—C. Willard Camalier, D.D.S. 1912; 1726 I Street, Washington, D. C.

Treasurer.—Anna M. Bischoff, A.B. 1928; 2025 I Street, Washington, D. C.

Executive Secretary.—Lester Allan Smith, A.B. in L.S. 1932, A.M. in L.S. 1935; 2018 I Street, Washington, D. C.

Executive Committee:

Jessie Fant Evans (Mrs. Joshua Evans, Jr.), A.B. and T.D. 1913, Ed.D. 1932; 3405 Lowell Street, Washington, D.C.

May P. Bradshaw, A.B. 1909, A.M. 1913; 1631 S Street, Washington, D. C.

Alexander Wetmore, M.S. 1916, Ph.D. 1920, Sc.D. 1932 (A.B. 1912, University of Kansas); 204 Maple Avenue, Takoma Park, Maryland.

William M. Sweet, D.D.S. 1918; 1835 I Street, Washington, D. C.

Eugene S. Thomas, A.B. 1929 (M.B.A. 1934, Harvard University); Television Station WOIC, 40th and Brandywine Streets, Washington, D. C.

Helen Gladys Kain, B.S. 1917, M.D. 1923; 1801 I Street, Washington, D. C.

Otto Schoenfelder, A.B. in Govt. 1933, LL.B. 1942; Tax Court of the United States, Washington, D. C.

Charles S. Rhyne, LL.B. 1937; 730 Jackson Place, Washington, D. C.

Joseph Roe, Ph.D. 1923 (A.B. 1916, Roanoke College; A.M. 1917, Princeton University); 1352 Jefferson Street, Washington, D. C.

Willard L. Hart, LL.B. 1926 (B.S. 1919, Clemson Agricultural College); United States Court of Claims, Washington, D. C.

THE GEORGE WASHINGTON UNIVERSITY MEDICAL SOCIETY

The George Washington University Medical Society, the organization of graduates of the School of Medicine, was established in 1905 and since 1926 has been affiliated with the General Alumni Association. The objects of the Society, as stated in the constitution, are "The promotion of the science and art of medicine and the welfare of the School of Medicine."

1950-51

President.—Russell McNitt, M.D. 1925, B.S. in Med. 1925; 1801 I Street, Washington, D. C.

President Elect.—John Hugh Lyons, M.D. 1918, B.S. 1919; 1344 19th Street, Washington, D. C.

First Vice President.—Herman S. Hoffman, A.B. 1921, M.D. 1924; 3118 16th Street, Washington, D. C.

Second Vice President.—Elizabeth Parker, A.M. 1930, M.D. 1932 (A.B. 1924, Brenau College); Lebanon, Route 1, Lorton, Virginia.

Secretary-Treasurer.—Oscar B. Hunter, M.D. 1912, A.B. 1916, A.M. 1917; Suite 1000, Columbia Medical Building, Washington, D. C.

Council:

- Herbert S. Gates, M.D. 1923; 815 East Capitol Street, Washington D. C.
 Fred A. J. Geier, M.D. 1925; 4948 Lowell Street, Washington, D. C.
 J. Burton Glenn, M.D. 1921, B.S. 1921; 2015 Q Street, Washington, D. C.
 Clyde P. Reeves, M.D. 1933; 1028 Connecticut Avenue, Washington, D. C.
 James I. Boyd, A.B. 1923, M.D. 1926, M.S. 1927; 8200 Marlboro Pike SE., Washington, D. C.

THE GEORGE WASHINGTON LAW ASSOCIATION

The George Washington Law Association, the organization of graduates of the Law School, was founded in 1912 and has been affiliated with the General Alumni Association since 1926. Its purposes as stated in the constitution are to promote high standards of legal education, to keep the alumni of the Law School in closer touch with one another and especially with members of their own classes, to gather and publish at intervals information as to the whereabouts and activities of these alumni, and to further the interests of the Law School.

1950-51

- President.*—Charles S. Rhyne, LL.B. 1937; 730 Jackson Place, Washington, D. C.
First Vice President.—H. Cecil Kilpatrick, LL.B. 1922; American Security Building, Washington, D. C.
Second Vice President.—Vernon Romney, LL.B. 1922; 212 Kearns Building, Salt Lake City, Utah
Third Vice President.—Horace Lohnes, LL.B. 1924, LL.M. 1925; Munsey Building, Washington, D. C.
Secretary-Treasurer.—Samuel C. Caldwell, LL.B. 1943; 1216 Tower Building, Washington, D. C.
Executive Committee:
 John J. Wilson, LL.B. 1921; 815 15th Street, Washington, D. C.
 John C. Gall, LL.B. 1923; Commonwealth Building, Washington, D. C.
 Mary Agnes Brown, A.B. 1924, LL.B. 1932, S.J.D. 1942; 4606 15th Street, Washington, D. C.
 C. Oscar Berry, LL.B. 1932, A.B. 1933; 1100 H Street, Washington, D. C.

THE LIBRARY SCIENCE ALUMNI ASSOCIATION

The Library Science Alumni Association was organized in 1932 by graduates of the Division of Library Science and became an affiliate of

the General Alumni Association in 1935. It was established to foster a closer relationship between the Faculty and graduates and to further the interests of the Division of Library Science and of the University as a whole.

1949-50

President.—Clara Egli LeGear (Mrs. Russell LeGear), A.B. in L.S. 1930, A.M. in L.S. 1936; 322 North Carolina Avenue SE., Washington, D. C.

Vice President.—John S. Moats, A.B. in L.S. 1932 (B.S. in Chem. Eng. 1928, Washington University); 7109 Harwick Road, Washington, D. C.

Secretary.—Helene Gingras, A.B. in L.S. 1932; 316 North Carolina Avenue SE., Washington, D. C.

Treasurer.—Minnie Wiener, A.B. in L.S. 1938 (B.S. in Ed. 1929, College of the City of New York; A.M. 1932, Hunter College); 1722 19th Street, Washington, D. C.

THE ENGINEER ALUMNI ASSOCIATION OF THE GEORGE WASHINGTON UNIVERSITY

The Engineer Alumni Association was organized in 1936 and has been affiliated with the General Alumni Association since that time. Its objects are to unite the graduates and Faculty of the School of Engineering in closer fellowship, to promote the general welfare of the School of Engineering and of the University at large, to foster activities of the engineering organizations recognized by the University, and to advance the profession of engineering in general.

1950-51

President.—Merwyn N. McKnight, Sr., B.S. in M.E. 1938, B.E.E. 1941; 1704 North Calvert Street, Arlington, Virginia.

Vice President.—George A. Kilpatrick, B.C.E. 1945; 1109 N. Tuckahoe Street, Falls Church, Virginia.

Recording Secretary.—James Sinsabaugh, B.M.E. 1949; Purcellville, Virginia.

Corresponding Secretary.—A. Benjamin Sorin, B.M.E. 1948; 1924 3rd Street, Washington, D. C.

Executive Committee:

William C. Thom, B.S. in C.E. 1904, C.E. 1905; 1346 Hemlock Street, Washington, D. C.

Benjamin C. Cruickshanks, Sr., B.S. in M.E. 1920; 5733 4th Street, Washington, D. C.

G. Chester Thom, B.S. in E.E. 1932, B.S. in M.E. 1934; 6326 32nd Street, Washington, D. C.

THE GEORGE WASHINGTON UNIVERSITY NURSES ASSOCIATION

The George Washington University Nurses Association was organized in 1914. In 1936 this organization was made an integral part of the General Alumni Association, and graduates of the School of Nursing were accorded associate membership. The objects of the Association are to hold in unison the graduates of the George Washington University Hospital School for Nurses, to care for its sick members, and to promote the advance of nursing in the interest of the George Washington University Hospital.

1949-50

President.—Claudine C. Thomas (Mrs. Homer R. Thomas), N. Dip. 1927; 1714 N. Adams Street, Arlington, Va.

Vice President.—Mrs. Louva Baker, N. Dip. 1919; 1361 Iris Street, Washington, D. C.

Secretary.—Arabella Frye, Ex. 1933; 1301 Vermont Avenue, Washington, D. C.

Treasurer.—Ruth Marmaduke, N. Dip. 1929; 4730 16th Road N., Arlington, Va.

REGIONAL ALUMNI CLUBS

Regional alumni clubs sponsored by the General Alumni Association are maintained in the following places: Little Rock, Ark.; Los Angeles, Calif.; Northern California; Denver, Colo.; Chicago, Ill.; Portland, Maine; Baltimore, Md.; Detroit, Mich.; Kansas City, Mo.; St. Louis, Mo.; Newark, N. J.; Brooklyn, N. Y.; New York, N. Y.; Cleveland, Ohio; Toledo, Ohio; the Ohio River Valley (Cincinnati and adjacent sections of Kentucky and Ohio); Oklahoma City, Okla.; Pittsburgh, Pa.; Dallas, Tex.; Salt Lake City, Utah; Richmond, Va.; Seattle, Wash.; Milwaukee, Wis.; New England; Philippine Islands; Puerto Rico.

Information about the officers and activities of these clubs may be obtained from the Director of Alumni Relations of the University.

THE GRADUATE ENDOWMENT FUND

The Graduate Endowment Fund was founded by the class of 1926 with the object of providing endowment to be used for the development of the University. Membership is limited to seniors and graduates who sign a pledge of \$100, payable annually in ten equal installments.

The pledge notes and funds are held in trust. When the principal reaches the sum of \$100,000, the Board of Administrators of the Fund may pay to the University such sums as it may vote for erection of buildings, acquisition of sites, maintenance, and purchase of equipment.

At no time may money be drawn so as to leave a balance of less than \$50,000 on deposit.

On request, the Director of Alumni Relations of the University will furnish pledge blanks to alumni.

THE COLUMBIAN WOMEN

The objects of this organization are (1) the promotion of acquaintanceship among its members; (2) the advancement of women by the founding of scholarships in the various departments of the University; and (3) the promotion of the interests of the University.

MEMBERSHIP

1. The following persons shall be eligible for active membership: (a) any woman who for one year has been a regularly registered student in The George Washington University, provided that she shall have received credit for thirty hours of work; (b) any woman member of the Faculties or Board of Trustees, any woman on the administrative staff; the wife of any member of the Faculties, Board of Trustees, or of the administrative staff; (c) any woman recipient of an honorary degree from the University.

1949-50

President.—Irene Pistorio, B.S. in Arch. 1904; 2442 20th Street, Washington, D. C.

First Vice President.—Arline Dufour, A.B. and B.Dip. in Ed. 1920, A.M. 1932; 1831 Kilbourne Place, Washington, D. C.

Second Vice President.—Winifred Alvather, B.S. in H.E. 1942; 3521 W Place, Washington, D. C.

Corresponding Secretary.—Elizabeth E. Benson, A.B. in Ed. 1931 (A.M. 1931 Gallaudet College; LL.B. 1932, Washington College of Law); Gallaudet College, Florida Avenue at 7th Street NE., Washington, D. C.

Assistant Corresponding Secretary.—Mrs. John Bruce Handy, A.B. 1914; 100 5th Street NE., Washington, D. C.

Recording Secretary.—Mrs. J. Beaty Griffith, A.B. 1922; 1746 K Street, Washington, D. C.

Treasurer.—Mrs. George Blanchard, A.B. 1916; 806 Massachusetts Avenue NE., Washington, D. C.

Historian.—Elizabeth S. Mewshaw, A.B. in Ed. 1932, A.M. 1934; 2127 California Street, Washington, D. C.

THE WOMEN'S BOARD OF THE GEORGE WASHINGTON
UNIVERSITY HOSPITAL

The object of this organization is to aid in every way the interests and advancement of The George Washington University Hospital. Meetings are held on the first Wednesday of each month, October to June, inclusive. Inquiries regarding membership should be addressed to the Corresponding Secretary, The George Washington University, Washington 6, D. C.

1950-51

President.—Mrs. Cloyd Heck Marvin

Vice President.—Mrs. Wilbur Carr

Vice President.—Mrs. Gilbert Grosvenor

Vice President.—Mrs. Walter A. Bloedorn

Recording Secretary.—Mrs. Everett Johnson

Corresponding Secretary.—Mrs. Wolfram Legner

Assistant Corresponding Secretary.—Mrs. William Y. Handy

Treasurer.—Mrs. John Withrow Brewer

Assistant Treasurer.—Mrs. Barton W. Richwine



THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, D. C.

Report of the Comptroller
FOR THE YEAR ENDED
AUGUST 31, 1950

EXHIBITS

A	Balance Sheet	12
B	Summary of Current Operating Income and Expense	14
B	Summary of Current Funds Unrestricted Surplus	15
C	Summary of Current Funds Restricted	16
D	Summary of Loan Funds Principal	17
E	Summary of Endowment Funds Principal	18
F	Summary of Plant Funds Principal	19
G	Summary of Net Investment in Plant	20

SCHEDULES

1	Current Operating Income	22
2	Current Operating Expense	29
3	Miscellaneous Assets and Liabilities	40
4	Assets of Loan Funds	41
5	Assets of Endowment Funds—Controlled by the University	42
6	Endowment Funds—Controlled by Other Trustees	49
7	Assets of Plant Funds	50
8	Land and Buildings	52
8	Trust Notes Payable	58
9	Equipment	59
10	Current Funds Restricted—Organized Research	60
"	" " Investment Income	64
"	" " Miscellaneous Funds	68
"	" " Agency Funds	70
11	Changes in Principal of Loan Funds	71
12	Changes in Principal of Endowment Funds	72
13	Changes in Principal of Plant Funds	78

APPENDIX

Gifts and Grants	80
Description of Loan, Endowment, and Plant Funds	83

INDEX OF LOAN, ENDOWMENT, AND PLANT FUNDS

Acker	84	King Fellowship	86
Alumni Unrestricted Endowment	84	Knapp	91
Alumni Professorship	86	Kulibank	89
Andrews	90	Larner	95
Bartsch	90	Law School Expansion	96
Baron	87	Lewis	87
Brown	91	Library Books	96
Burns	94	Meyer Library	89
Burton	88	Morehouse	92
Campaign	84	National Park Seminary	89
Carr	90	Noyes Library	89
Carroll	86	Ordonaux	95
Carter, H. H.	90	Pairon	97
Carter, M. M.	91	Pearson	92
Chamberlain	88	Powell	93
Chapman	91	Reichelderfer	85
College Women's	87	Reichardt	89
Coffey	91	Reserves for Protection of Investments	95
Columbian Women Funds	86	Consolidated Endowment	97
Constitutional	87	Consolidated Plant	95
Copier	84	Scottish Rite	95
Crocoran	94	Ruggles	85
Crowles	94	Sanders Unrestricted Endowment	85
Crossant	94	Sanders Fellowship	86
Cutter	94	School of Engineering Building	97
D. C.-D. A. R. Endowment	84	School of Medicine Endowment	87
D. C.-D. A. R. Loan	83	School of Medicine Building	97
Davis Unrestricted Endowment	84		
Davis Prize	94		
Davis Scholarship	92		
Depew	86		

Doney.....	92	Scottish Rite	87
Elton.....	86	Sharpe.....	87
Esary.....	94	Shepard.....	93
Evans.....	94	Spencer.....	93
Farnham.....	92	Staughton-Elton	95
Field House.....	96	Sterrett.....	93
Fitch.....	94	Stone.....	85
Founders of Columbian Women	91	Subscription Gifts	83
Fry.....	86	Sutherland.....	89
Gardner.....	87	Swisher Meave Book	95
General Hospital.....	88	Swisher Prize.....	93
George Washington Law Association Loan.	83	Swisher Scholarship	85
George Washington Memorial	96	Synus.....	85
Gibbs.....	87	Teller.....	89
Goddard Endowment	84	Tree.....	85
Goddard Prize	94	Trustees.....	85
Graduate.....	88	University Loan	83
Haggett.....	84	Walker.....	93
Hassigel.....	92	Walsh.....	95
Harris.....	83	War Loan	83
Harvey.....	92	Woodell Unrestricted Endowment	85
Hazelton.....	92	Woodell Prize	95
Hendon.....	91	Woodell Association	85
Home Economics Loan.	83	Willard.....	91
Houser.....	88	Withers.....	85
Howard Library	89	Withington.....	93
Hubbard.....	95	Women's Activities Building	97
Hubbard.....	95	Women's Board Gift Shop Equipment	97
Kellogg Loan.....	83	Woodbury.....	89
Kendall.....	92	Woodhull Unrestricted Endowment	85
Kimmel.....	88	Woodhull Scholarship	93
King Unrestricted Endowment	84	Yulec.....	86

LETTER OF TRANSMITTAL

November 15, 1950

TO THE PRESIDENT AND THE BOARD OF TRUSTEES
THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, D. C.

GENTLEMEN:

I am submitting herewith the Report of the Comptroller of The George Washington University for the fiscal year ended August 31, 1950. This report is a review of the budget operations for the year and is based on the budget approved by the Board of Trustees of the University.

The accounts of the University are kept and its financial reports set up as far as practicable in conformity with the recommendations of the National Committee on Standard Reports for Institutions of Higher Education. Under that plan the funds of the University are classified in various fund groups, and the accounts and financial statements are set up to segregate clearly the assets and liabilities of each of these groups as indicated in the balance sheet, Exhibit A.

R. G. Rankin & Co. have examined the accounts of the University for the past year, and their certificate is submitted herewith.

A condensed summary of the principal facts in the report is presented below and on succeeding pages, followed by detailed Exhibits and Schedules.

Respectfully submitted,
HENRY W. HERZOG
Comptroller

CONDENSED SUMMARY CURRENT FUNDS—UNRESTRICTED

These Funds represent unrestricted assets which are available for immediate use in the current operation of the University.
Operating Income for the Year (Exhibit B and Schedule 1) 7,126,288.19
Operating Expense for the Year (Exhibit B and Schedule 2) 6,431,245.85
Excess of Current Operating Income over Current Operating Expense (Exhibit B) 695,042.34

The latter amount was added to Current Funds Unrestricted Surplus. Surplus at the end of the year amounted to \$460,914.87 (Exhibit B). During the year there was transferred from Surplus to Net Investment in Plant \$836,936.16 for the purchase of land and buildings, \$139,531.09 for the purchase of equipment, and \$7,527.07 for the reduction of trust notes payable.

Prepaid Expense of \$197,621.31 includes inventories of \$76,015.44 at the University and \$121,605.87 at the Hospital (Schedule 3). Deferred Charges include \$200,485.46 net loss on the operation of the Hospital for the years 1947-48 through 1949-50, and \$187,674.25 representing Hospital Equipment purchased by the University in excess of the amount paid for from receipts of the Hospital Equipment Fund (Exhibit A). The latter item is fully explained on page 9.

Accounts Receivable in the amount of \$614,290.48 include \$264,740.14 due from the Veterans Administration under the "GI Bill of Rights," \$86,127.31 from the U. S. Government under research contracts, and \$283,695.26 due the Hospital (Schedule 3). Of this latter amount \$200,110.54 is due from patients still in the Hospital, and from Group Hospitalization and other agencies under contracts. The balance of \$83,631.92 represents doubtful and delinquent accounts against which a Provision for Doubtful Accounts of \$35,000 has been charged to current operations.

The Notes Payable of \$700,000 were paid in full on or before October 25, 1950 (Exhibit A).

CURRENT FUNDS—RESTRICTED

Research grants, investment income, gifts, and agency funds comprise these funds which consist of currently expendable assets, limited as to disposition (Exhibit C and Schedule 10).

During the year restricted gifts and grants for use as specified amounted to \$585,347.10 (page 80). Restricted endowments earned \$87,519.40. Unexpended Restricted and Agency Funds totaled \$285,355.63 (Exhibit C).

LOAN FUNDS

For the assistance of students seeking financial aid, loan funds have been established by the University and other organizations (Schedule 11). Loans are made at a low rate of interest and when repaid the interest is added to the principal of the funds.

During the year, 161 loans were made to students. Loan Funds totaled \$37,289.00 (Exhibit D).

ENDOWMENT FUNDS

The principal of all endowment funds amounted to \$2,917,040.75, an increase of \$20,496.13 (Exhibit E). These funds are represented by assets which, under the terms of wills, deeds of gift, or under the by-laws of the University, must be held in perpetual trust for income-producing purposes. The principal amount and changes during the year of every endowment fund are recorded in Schedule 12. A description of the funds begins on page 84.

"Consolidated Endowment Funds" consisted of ninety-four endowments with a total value of \$1,521,595.73 (Schedule 5—Page 2). The assets of these funds are combined to eliminate the possibility of partial or total loss of any fund through the failure of a specific investment, and to avoid temporary suspension of income and the carrying of uninvested small cash balances, and to give equality of treatment to all funds. Unless otherwise restricted by the donors, the assets of all new endowments are added to the assets of the Consolidated Endowment Funds.

Reserves for Protection of Investments were as follows: Consolidated Endowment Funds, \$68,007.45; Scottish Rite Fund, \$59,909.38 (Schedule 12—Page 3).

Earnings of Consolidated Endowment Funds are recorded in one income account and at the end of the year are distributed to the participating funds in the proportion each fund bears to the total of the entire group. The rate of return on the investments of these funds amounted to 4.5891% during the past year and, after deducting 10% as a reserve against losses (Schedule 12—Page 3), was distributed at the rate of 4.1302%.

The Scottish Rite Endowment Fund earned 3.7961% net income on its investments during the year just ended.

Net income of all endowment funds for the year was \$114,144.01 (Schedule 10—Page 4).

Pledges to the School of Medicine Endowment Fund on August 31, 1950, totaled \$155,934.00.

PLANT FUNDS—UNEXPENDED

Cash and other assets for development of the physical plant comprise these funds (Schedule 7). There was expended during the past year \$22,102.36 for equipment (Exhibit F), leaving a balance of \$293,141.64.

The Hospital Equipment Fund was created in 1945 by gifts of various donors and has since been increased by gifts and other income for the purchase of equipment for the new Hospital. A report of activity through August 31, 1950, follows:

Hospital Equipment purchased 1945-46 through 1948-49	1,076,255.48	
" " " " 1949-50	46,611.25	1,122,866.73
Hospital Equipment Fund receipts 1945-46 through 1948-49	910,448.35	
" " " " 1949-50 (Schedule 13)	18,213.23	
Transfer from Women's Board Gift Shop Equipment Fund (Schedule 13)	928,661.58	
Hospital Equipment purchased in excess of receipts—Exhibit A	6,530.90	935,192.48
		<u>187,674.25</u>

The latter amount is reported as a Deferred Charge under Current Funds Unrestricted in anticipation of further gifts to reimburse the University for the amount which has been advanced to meet this need. Unpaid pledges to the Hospital Equipment Fund totaled \$6,565.00.

The Reserve for Protection of Consolidated Plant Funds Investments ended the year with a balance of \$6,068.08 (Schedule 13).

PLANT FUNDS—INVESTED IN PLANT

The investment in the physical plant of the University is analyzed as follows:

EXHIBITS A, B, AND C, SCHEDULES 8 AND 9	BALANCE AUGUST 31, 1949	NET ADDITIONS	REDUCTIONS	BALANCE AUGUST 31, 1950
LAND AND BUILDINGS	14,962,036.09	776,936.16		15,738,962.25
EQUIPMENT	1,884,332.64	117,631.51		2,001,964.15
TRUST NOTES PAYABLE	307,436.36		7,527.07	299,909.29
NET INVESTMENT IN PLANT	16,538,922.37	902,094.74		17,441,017.11

AUDIT CERTIFICATE

November 15, 1950

TO THE PRESIDENT AND THE BOARD OF TRUSTEES
THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, D. C.

We have examined the balance sheet of THE GEORGE WASHINGTON UNIVERSITY as of August 31, 1950, and the related statements of current operating income and expense, current funds surplus, and other fund transactions for the fiscal year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. It was not practicable to confirm receivables from United States Government Agencies, but we have applied other auditing procedures in verification of this asset.

In our opinion, the balance sheet and related statements of current operating income and expense, current funds surplus, and other fund transactions included in the accompanying REPORT OF THE COMPTROLLER OF THE UNIVERSITY, present fairly the financial position of THE GEORGE WASHINGTON UNIVERSITY as of August 31, 1950, and the results of its operations for the fiscal year then ended, in conformity with generally accepted principles of university and college accounting applied on a basis consistent with that of the preceding year.

R. G. RANKIN & Co.
CERTIFIED PUBLIC ACCOUNTANTS

THE GEORGE WASHINGTON UNIVERSITY

BALANCE SHEET

August 31, 1950

ASSETS		LIABILITIES	
		CURRENT FUNDS	
		UNRESTRICTED	
CASH	66,511.81	Notes Payable—Riggs National Bank, Due on or before November 29, 1950. Interest 3%	700,000.00
ACCOUNTS RECEIVABLE (Schedule 3)	614,290.43	ACCOUNTS PAYABLE	46,183.87
PREPAID EXPENSE (Schedule 3)	197,621.31	DEFERRED INCOME (Schedule 3)	59,484.57
DEFERRED CHARGES (Page 7)	200,485.46	SURPLUS (Exhibit B)	460,914.87
Hospital Deficit	187,674.25		1,266,583.31
Hospital Equipment			
		RESTRICTED	
CASH	231,305.63		
INVENTORY—GIFT SHOP	4,050.00		
U. S. A. SAVINGS BONDS Series G, 2½%, due 11-1-54..	50,000.00	PRINCIPAL OF FUNDS (Exhibit C)	285,355.63
		LOAN FUNDS	
CASH	21,787.14		
LOANS RECEIVABLE (Schedule 4)	15,501.86	PRINCIPAL OF FUNDS (Exhibit D)	37,289.00

ENDOWMENT FUNDS

CASH	37,931.15		
INVESTMENTS (Schedule 5)	2,543,573.96		
CONTROLLED BY OTHER TRUSTEES (Schedule 6)	2,381,505.11		
	<u>335,535.64</u>	2,917,040.75	2,917,040.75
		PRINCIPAL OF FUNDS (Exhibit E)	
PLANT FUNDS			
UNEXPENDED			
CASH	24,302.30		
INVESTMENTS (Schedule 7)	<u>268,839.34</u>	293,141.64	293,141.64
		PRINCIPAL OF FUNDS (Exhibit F)	
INVESTED IN PLANT			
LAND AND BUILDINGS (Schedule 8)	15,738,962.25		
EQUIPMENT (Schedule 9)	<u>2,001,964.15</u>		
		TRUST NOTES PAYABLE (Schedule 8)	299,909.29
		NET INVESTMENT (Exhibit G)	<u>17,441,017.11</u>
			17,740,926.40
TOTAL	<u>22,540,336.73</u>	TOTAL	<u>22,540,336.73</u>

EXHIBIT A

SUMMARY OF CURRENT OPERATING INCOME AND EXPENSE

For the Year Ended August 31, 1950

Income (Schedule 1)		
Educational and General		
Student Fees	3,337,749.96	
Investments	99,242.82	
Gifts	8,344.38	
Grants for Organized Research	540,880.24	
Miscellaneous Sources	147,320.73	
Activities Relating to Instruction—Hospital	2,688,324.57	6,831,522.35
Other	18,004.03	294,765.84
Auxiliary Enterprises	2,706,328.60	7,126,288.19
Expenses (Schedule 2)		
Educational and General	654,096.43	
Administration and General	1,735,912.27	
Instruction	532,535.86	
Organized Research	82,137.71	
Laboratory	383,877.17	
Maintenance and Operation of Plant	261,058.54	
Miscellaneous	2,590,549.67	6,240,167.65
Activities Relating to Instruction—Hospital	2,572,545.64	235,686.99
Other	18,004.03	46,691.01
Auxiliary Enterprises		6,522,545.65
Non Educational		91,299.80
		6,431,245.85
Less reimbursement for overhead included above		
		695,042.34
EXCESS OF CURRENT OPERATING INCOME OVER CURRENT OPERATING EXPENSE (see below)		

SUMMARY OF CURRENT FUNDS UNRESTRICTED SURPLUS

For the Year Ended August 31, 1950

668,870.85

BALANCE AUGUST 31, 1949.....

ADDITIONS

Excess of Current Operating Income over Current Operating Expense (see above)..... 695,042.34
 Deferred Charge—Hospital Equipment. To be recovered in subsequent years from gifts and other income. Cumulative balance reported on Exhibit A; explanation on page 7..... 28,398.02
 Reimbursment for depreciation on hospital building and equipment (Exhibit G)..... 168,000.00
 Reimbursment for sale of Student Club Equipment..... 165.00
 Reimbursment for expenditures made prior to September 1, 1949..... 211.91
 (George Washington Memorial Fund (Schedule 13)).....

891,817.27
1,560,688.12

DEDUCTIONS

Reduction of Deferred Charge—Hospital Deficit. Excess of Hospital Income over Hospital Expense. Cumulative balance reported on Exhibit A; explanation on page 7..... 115,778.93
 Transferred to Net Investment in Plant—Exhibit G.....
 Land and Buildings..... 836,936.16
 Equipment..... 139,531.09
 Reduction of Trust Notes Payable.....
 Trust Notes Payable August 31, 1949..... 307,436.36
 Trust Notes Payable August 31, 1950..... 299,909.29

1,099,773.25

BALANCE AUGUST 31, 1950—EXHIBIT A.....

460,914.87

EXHIBIT B

SUMMARY OF CURRENT FUNDS RESTRICTED

For the Year Ended August 31, 1950

	TOTAL	ORGANIZED RESEARCH	INVESTMENT INCOME	MISCEL- LANEOUS	AGENCY
BALANCE AUGUST 31, 1949.	244,969.24	165,939.76	50,181.39	14,661.86	14,186.23
ADDITIONS (Schedule 10)					
Gifts and grants	583,800.10	549,919.10	120,712.90	33,881.00	30,458.95
Investment income	120,712.90				
Deposits	30,458.95				
Other	27.25			27.25	
	<u>734,999.20</u>	<u>549,919.10</u>	<u>120,712.90</u>	<u>33,908.25</u>	<u>30,458.95</u>
DEDUCTIONS (Schedule 10)					
Salaries	328,564.96	328,564.96		551.60	
Expense	204,522.50	203,970.90		195.00	
Prizes	1,038.80		843.80	792.00	
Scholarships	4,065.00		3,273.00		
Bronze tablet for memorial	155.00		155.00		
Transferred to					
Exhibit G - Net Investment in Plant	211.05		211.05	7,837.32	
Schedule 1 - Current Operating Income	108,278.82		100,441.50		
Schedule 11 - Loan Funds	204.51		204.51	1,000.00	
Schedule 12 - Endowment Funds	9,813.88		8,813.88	25.00	
Schedule 13 - Plant Funds	3,644.00		3,619.00	173.60	
Refunded to donor	173.60				33,958.69
Withdrawals	33,958.69				33,958.69
	<u>684,612.81</u>	<u>532,535.86</u>	<u>117,543.74</u>	<u>10,574.52</u>	<u>10,686.49</u>
BALANCE AUGUST 31, 1950—EXHIBIT A.	285,355.63	183,323.00	53,350.55	37,995.59	

SUMMARY OF LOAN FUNDS PRINCIPAL

For the Year Ended August 31, 1950

BALANCE August 31, 1949.....	37,518.00
ADDITIONS (Schedule 11)	
Income of D.C.—D.A.R. Endowment Fund.....	206.51
Gifts.....	446.37
Interest on loans.....	227.30
	<u>880.18</u>
	38,398.18
DEDUCTIONS (Schedule 11)	
Refunded to United States Government.....	1,109.18
BALANCE August 31, 1950—EXHIBIT A.....	<u>37,289.00</u>

EXHIBIT D

SUMMARY OF ENDOWMENT FUNDS PRINCIPAL

For the Year Ended August 31, 1950

BALANCE AUGUST 31, 1949..... 2,896,544.62

ADDITIONS (Schedule 12)

Gifts.....	16,877.00
Investment income.....	15,436.57
Gain on sale of investments.....	4,912.31
Transferred from Schedule 10—Page 5.....	38,225.88

DEDUCTIONS (Schedule 12)

Loss on sale of investments.....	6,436.71
Transferred to Organized Research—Schedule 10—Page 1.....	17,729.75
	<u>20,496.13</u>

BALANCE AUGUST 31, 1950—EXHIBIT A..... 2,917,040.75

SUMMARY OF PLANT FUNDS PRINCIPAL

For the Year Ended August 31, 1950

BALANCE AUGUST 31, 1949..... 240,261.62

ADDITIONS (Schedule 13)

Gifts.....	73,156.40
Investment income.....	5,822.47
Gain on sale of investments.....	2,721.32
Transferred from Schedule 10—Page 5.....	25.00
	<u>81,725.19</u>

DEDUCTIONS (Schedule 13)

To reduce Deferred Charge—Hospital Equipment (page 9).....	6,530.90
Transferred to Surplus—Exhibit B.....	211.91
Equipment—Invested in Plant—Exhibit G.....	22,102.36
	<u>28,845.17</u>
	<u>52,880.02</u>

BALANCE AUGUST 31, 1950—EXHIBIT A..... 293,141.64

EXHIBIT F

SUMMARY OF NET INVESTMENT IN PLANT

For the Year Ended August 31, 1950

BALANCE AUGUST 31, 1949.....	16,538,922.37
ADDITIONS	
Reduction of Trust Notes Payable (Exhibit B).....	7,527.07
Land and Buildings (Schedule 8)	
Current Funds Unrestricted Surplus (Exhibit B).....	836,936.16
Equipment (Schedule 9)*	
Current Funds Unrestricted Surplus (Exhibit B).....	139,531.09
Current Funds Restricted (Exhibit C).....	211.05
Plant Funds (Exhibit F).....	22,102.36
Departments (Schedule 2—Page 6).....	71,814.87
	<u>233,659.37</u>
	1,078,122.60
	<u>17,617,044.97</u>
DEDUCTIONS	
Provision for Depreciation—Hospital (Schedules 2 and 8)—Exhibit B	60,000.00
Provision for Depreciation—Hospital Equipment (Schedules 2 and 9)—Exhibit B	108,000.00
Sale of Student Club Equipment (Schedule 9)	<u>165.00</u>
Loss on sale of Student Club Equipment (Schedule 9)	7,862.86
	<u>*8,027.86</u>
	176,027.86
BALANCE AUGUST 31, 1950—EXHIBIT A.....	<u>17,441,017.11</u>

SCHEDULES

CURRENT OPERATING INCOME
For the Year Ended August 31, 1950

EDUCATIONAL AND GENERAL

STUDENT FEES

Tuition and Laboratory

Junior College

Columbia College

Graduate Council

School of Government

Division of Special Students

" " University Students

Law School

School of Education

" " Engineering

" " Medicine

" " Pharmacy

Summer Sessions—Junior College

" " Columbia College

" " Graduate Council

" " School of Government

" " Division of Special Students

" " University Students

" " Law School

" " School of Education

" " Engineering

" " Pharmacy

711,188.61
368,499.39
16,166.00
191,038.16
198,986.29
308,394.85

1,794,273.30

398,920.80
84,293.81
215,085.72
216,790.00
25,808.50

940,898.83
2,735,172.13

97,765.96
67,255.08
2,957.63
52,233.40
35,827.22
100,957.25
93,921.50
25,084.65
25,369.30
588.00

501,959.99

677.34 3,237,809.46

Unallocated—Old Fees

Miscellaneous Fees

Application.....	32,267.35	
Aptitude Tests.....	873.00	
Art Validation.....	412.50	
Binding Theses.....	652.00	
Breakage.....	268.00	
Graduation.....	51,835.00	
Late.....	1,135.00	
Library Fines.....	885.55	
Publication of Theses.....	600.00	
Reinstatement.....	700.00	
Service.....	1,543.00	
Special Examinations.....	350.00	
Student Bar Association.....	6,586.00	
Transcripts.....	1,833.10	
	99,940.50	3,337,749.96

CURRENT OPERATING INCOME (Continued)
For the Year Ended August 31, 1950

EDUCATIONAL AND GENERAL (Continued)

INVESTMENT INCOME (Schedule 10)		
Endowment Funds—Unrestricted	26,624.61	96,292.93
" " Restricted	69,668.32	2,949.89
Plant Funds—Restricted		99,242.82

GIRTS		
Restricted		
Schedule 10 (portion used)	42.20	
Cullen, Frederick J.	64.40	
D. C. Women's Pharmaceutical Auxiliary	600.00	
Freeman and Watts, Drs.	5,833.24	
Markle Foundation	1,024.14	
Patent Law Foundation	190.40	
Research in Surgery		7,754.38
Other (page 80)		590.00
		8,344.38

GRANTS FOR ORGANIZED RESEARCH (Schedule 10)		
Deferred from 1948-49	165,939.76	715,858.86
Income 1949-50	549,919.10	183,323.00
Deferred to 1950-51		532,535.86

MISCELLANEOUS SOURCES		
Audio Visual Aids		925.67
Discounts Earned		4,355.17
Homecoming Celebration		3,127.38
Miscellaneous Income		2,050.31
Reading Clinic		1,295.00
Rent on University Property—Net		54,532.31
Speech Clinic		3,317.00
University Press—Schedule 10	82.94	
" Other	10.25	
Veterans Administration—Handling Fee		93.19
		<u>49,687.83</u>
Student Activities		
Athletic Programs	3,371.83	
Law Review	2,195.69	
University Players	4,141.40	
Student Council		
Book Exchange	2,429.72	
Cherry Tree (portion used)	6,981.35	
Colonial Review (portion used)	345.83	
Glee Club	52.80	
Hatchet	7,383.55	
Junior Class (portion used)	14.00	
Miscellaneous	522.59	
Senior Class (portion used)	498.11	
	<u>18,227.95</u>	
		<u>27,936.87</u>
		<u>147,320.73</u>

CURRENT OPERATING INCOME (Continued)
For the Year Ended August 31, 1950

EDUCATIONAL AND GENERAL (Continued)

ACTIVITIES RELATING TO INSTRUCTION—HOSPITAL

Room Charges	400,792.70	
Private Rooms	736,848.90	
Semi-Private Rooms	178,233.30	
Wards	80,176.10	1,396,051.00
Nursery		
Special Service Departments	151,734.00	
Operating Rooms	70,720.00	
Delivery Rooms	187,362.00	
Anesthesia	145,107.40	
X-Ray	59,480.90	
Physical Medicine	189,840.75	
Laboratories—Tests	30,933.00	
Pathology	10,856.50	
Electrocardiographs	163,012.29	
Pharmacy	81,115.10	
Medical and Surgical Supplies	29,447.37	
Oxygen	3,125.25	
Baby Beds	12,627.50	1,136,127.06
Electroencephalography	715.00	
Blood Plasma		
Out-Patient Department	43,859.48	
Clinic	12,703.92	
Emergency	19,383.48	
Ophthalmology	8,820.95	
Urology	4,101.00	88,868.83
Surgery		
Other Income	13,859.63	
Telephone	2,923.52	16,783.15
Recovery on Bad Debts		2,637,830.04

Less Deductions		
Allowances—Group Hospitalization	23,152.09	
" Hospital Service Agency	11,587.72	
" Health Department	4,320.00	
" Discounts	2,177.57	
" Miscellaneous	2,449.94	
" Free Work	9,073.91	
	<u>52,761.23</u>	2,585,068.81
Other Sources		
Cafeteria	94,581.52	
Special Duty Nurses	2,094.73	
Laundry	772.16	
Ambulance Service	173.00	
Endowment Income (Schedule 10)	1,198.68	
Gifts (page 80)	957.00	
Miscellaneous	3,478.67	
	<u>103,255.76</u>	2,688,324.57
ACTIVITIES RELATING TO INSTRUCTION—POST-GRADUATE MEDICAL EDUCATION		
Deferred from 1948-49	45,681.22	
Tuition	14,602.00	
Deferred to 1950-51	<u>60,283.22</u>	18,004.03
		<u>42,279.19</u>

CURRENT OPERATING INCOME (Continued) For the Year Ended August 31, 1950

AUXILIARY ENTERPRISES

RESIDENCE HALLS		
Nurties Home—Everglades Apartments	15,463.23	
Staughton Hall	14,040.66	
Strong Hall	32,129.94	
Veterans Housing	34,106.55	
Wellington Hall	22,562.10	
2025 H Street, NW	4,337.97	122,640.45
SORORITY HALLS		
2112 G Street, NW	1,350.00	
2129 G Street, NW	4,500.00	
2131 G Street, NW	660.00	
802 21st Street, NW	1,320.00	7,830.00
OTHER		
Student Union Cafeteria—Commissions	14,803.73	
Student Union—Other Income	7,151.35	
Book Store—New Books	21,529.70	
" Used Books	7,179.92	
Student Store	50,583.98	
Duplicating Bureau	101,248.68	
Lisner Auditorium	4,084.17	
Martha Washington Club	15,353.04	
Washington Counseling Center	110.00	
	43,499.50	
	164,295.39	294,765.84
TOTAL—EXHIBIT B		<u>7,126,288.19</u>

CURRENT OPERATING EXPENSE

For the Year Ended August 31, 1950

EDUCATIONAL AND GENERAL	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT G
ADMINISTRATION AND GENERAL				
President's Office	49,332.14	36,807.17	12,524.97	
Vice-President's Office	18,143.13	15,495.42	2,647.71	
Administrative Secretary's Office	56,639.54	31,477.91	25,161.63	
Comptroller's Office	108,607.35	95,783.71	12,823.64	
Business Manager's Office	121,837.79	43,809.60	53,654.00	24,374.19
Admissions Office	48,126.38	44,629.36	3,497.02	
Registrar's Office	57,032.14	45,603.06	11,429.08	
Activities for Men	19,562.06	15,868.77	3,693.29	
Activities for Women	10,734.91	9,980.47	754.44	
Adviser to Students from Foreign Countries	1,286.07	499.98	786.09	
Alumni Relations Office	33,885.11	16,724.58	17,160.53	
Public Relations Office	40,495.51	22,524.29	17,971.22	
Retirements	62,311.54	16,236.32	46,075.22	
University Chapels	1,963.52	930.00	1,033.52	
Veterans Administration	21,667.54	19,777.66	1,889.88	
Scientific Activities	2,471.70	1,002.73	47.17	1,421.80
TOTAL—EXHIBIT B	654,096.43	417,151.03	211,149.41	25,795.99

CURRENT OPERATING EXPENSE (Continued) For the Year Ended August 31, 1950

	<u>TOTAL</u>	<u>SALARIES</u>	<u>OTHER EXPENSE</u>	<u>EQUIPMENT EXHIBIT G</u>
EDUCATIONAL AND GENERAL (Continued)				
INSTRUCTION				
Junior College.....	11,680.63	10,496.17	1,184.46	
Columbian College.....	4,450.94	3,908.72	551.22	
Graduate Council.....	4,382.54	2,659.92	1,722.62	
School of Government.....	5,119.89	4,495.90	623.99	
Division of Extension Students.....	219.03	110.00	109.03	
" Special Students.....	4,779.15	4,599.76	179.39	
" " University Students.....	8,104.54	7,360.60	743.94	
	<u>38,745.72</u>	<u>33,631.07</u>	<u>5,114.65</u>	
Art.....	21,355.03	10,800.00	10,555.03	3,731.32
Biology.....	19,748.57	15,088.75	928.50	210.00
Botany.....	12,061.53	11,366.25	485.28	
Business Administration.....	45,460.00	45,285.00	175.00	745.08
Chemistry.....	77,661.68	67,741.11	9,175.49	
Classical Languages and Literature.....	4,318.04	4,300.00	18.04	

Economics.....	41,330.00	41,130.00	200.00
English.....	98,651.57	98,208.00	443.57
Extension.....	4,273.36	4,008.00	265.36
Federal Government Management Interns.....	1,000.00	1,000.00	
Foreign Affairs.....	2,340.00	2,340.00	
Foreign Service Review.....	7,115.33	6,242.50	872.83
Geography.....	13,737.42	12,800.00	537.79
Germanic Languages.....	20,965.05	20,910.00	55.05
Graduate Council.....	1,230.43	300.00	930.43
History.....	51,394.82	51,225.00	169.82
Journalism.....	7,494.82	7,390.00	49.49
Mathematics.....	37,300.84	37,280.00	20.84
Philosophy.....	7,630.23	7,600.00	30.23
Physics.....	48,293.68	46,372.50	973.17
Political Science.....	37,506.99	37,360.00	146.99
Public Administration.....	2,880.00	2,880.00	
Psychology.....	41,636.90	40,945.00	580.58
Religion.....	8,476.31	8,320.00	156.31
Romance Languages.....	70,307.39	70,090.00	217.39
Secretarial Studies.....	4,641.45	4,430.00	211.45
Sociology.....	15,997.66	15,941.25	56.41
Speech.....	42,897.72	38,298.00	1,458.00
Statistics.....	20,097.50	19,960.00	137.50
Zoology.....	28,665.69	24,215.62	3,950.62
	<u>835,215.73</u>	<u>787,458.05</u>	<u>37,915.82</u>
			<u>9,841.86</u>
			<u>3,141.72</u>
			<u>499.45</u>
			<u>948.01</u>
			<u>55.33</u>
			<u>399.63</u>

CURRENT OPERATING EXPENSE (Continued)

For the Year Ended August 31, 1950

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT G
EDUCATIONAL AND GENERAL (Continued)				
INSTRUCTION (Continued)				
Law School				
Administration	10,750.95	8,683.17	2,067.78	
Instruction	144,936.39	143,018.57	1,917.82	
	<u>155,687.34</u>	<u>151,701.74</u>	<u>3,985.60</u>	
School of Education				
Administration	5,880.78	5,071.83	808.95	399.50
Instruction	38,934.80	36,922.50	1,612.80	41.20
"	11,215.47	9,900.00	1,274.27	
Home Economics	<u>56,031.05</u>	<u>51,894.33</u>	<u>3,696.02</u>	<u>440.70</u>
School of Engineering				
Administration	4,066.35	3,157.28	909.07	2,964.94
Instruction — Civil	37,105.41	33,498.84	641.63	5,873.30
" Electrical	34,818.22	28,380.00	564.92	2,332.85
" Mechanical	38,924.11	36,110.00	481.26	
" Administration	<u>8,300.00</u>	<u>8,300.00</u>		
	<u>123,214.09</u>	<u>109,446.12</u>	<u>2,596.88</u>	<u>11,171.09</u>

School of Medicine

Administration.....	31,017.31	27,712.40	3,304.91	414.50
Anatomy.....	21,383.71	19,946.40	1,022.81	
Anesthesiology.....	100.00	100.00		
Bacteriology, Hygiene, and Preventive Medicine.....	27,037.63	23,867.88	1,167.52	2,002.23
Biochemistry.....	25,845.06	24,300.00	1,028.11	516.95
Dermatology and Syphilology.....	1,522.00	1,450.00	72.00	
Lecturers and Exchange Professors.....	995.00	995.00		
Medicine.....	30,171.01	29,231.16	939.85	
Neurology and Neurological Surgery.....	5,883.95	5,574.92	309.03	
Obstetrics and Gynecology.....	18,238.46	18,099.96	138.50	
Ophthalmology.....	1,925.79	1,846.72	79.07	
Oto-rhino-laryngology.....	1,775.00	1,775.00		
Pathology.....	23,851.30	22,659.84	798.47	392.99
Pediatrics.....	7,192.30	7,133.32	58.98	
Pharmacology.....	18,894.46	17,713.12	796.94	384.40
Physical Medicine.....	2,800.00	2,800.00		
Physiology.....	23,003.17	21,285.86	1,229.92	487.39
Psychiatry.....	2,782.85	2,700.00	82.85	
Research - General.....	23,988.96	6,639.85	17,349.11	
Surgery.....	24,039.36	23,814.99	224.37	
Urology.....	1,496.30	1,300.00	196.30	
	293,943.62	260,946.42	28,798.74	4,198.46

CURRENT OPERATING EXPENSE (Continued)
For the Year Ended August 31, 1950

**EQUIPMENT
EXHIBIT G**

**OTHER
EXPENSE**

SALARIES

TOTAL

EDUCATIONAL AND GENERAL (Continued)

INSTRUCTION (Continued)

School of Pharmacy				
Administration.....	2,030.11	1,680.00	350.11	789.53
Instruction.....	26,132.02	23,637.39	1,705.10	789.53
	<u>28,162.13</u>	<u>25,317.39</u>	<u>2,055.21</u>	

Summer Sessions				
Administration.....	6,514.25	2,234.16	4,280.09	1,202.24
Instruction.....	172,321.24	165,386.12	5,732.88	1,202.24
	<u>178,835.49</u>	<u>167,620.28</u>	<u>10,012.97</u>	

Physical Education				
Men.....	31,594.37	22,530.33	9,064.04	
Women.....	33,228.45	27,831.00	5,397.45	
	<u>64,822.82</u>	<u>50,361.33</u>	<u>14,461.49</u>	

TOTAL INSTRUCTION	<u>1,735,912.27</u>	<u>1,604,745.66</u>	<u>103,522.73</u>	<u>27,643.88</u>
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ORGANIZED RESEARCH (Schedule 10)—EXHIBIT B.....

532,535.86 328,564.96 203,970.90

LIBRARIES

Books	17,800.47		17,800.47
Other Expense	64,337.24	55,683.63	8,464.31
TOTAL—EXHIBIT B.....	<u>82,137.71</u>	<u>55,683.63</u>	<u>8,464.31</u>
			<u>17,989.77</u>

MAINTENANCE AND OPERATION OF PLANT—EXHIBIT B...

383,877.17 190,157.66 193,719.51

MISCELLANEOUS EXPENSE

Alumni Dues	3,041.00		3,041.00
Real Estate Conveyance	2,161.85		2,161.85
Student Activities			
Health Administration	24,623.10	18,576.36	6,046.74
Law Review	8,105.26	1,000.00	7,105.26
Men's Athletics	160,917.66	38,393.32	122,524.34
Student Activities Office	10,105.24	2,314.98	7,790.26
Student Council Accounts	36,667.38	677.50	35,989.88
University Accounts	7,338.15	4,749.92	2,588.23
University Players	8,098.90	1,432.50	6,666.40
	<u>261,058.54</u>	<u>67,144.58</u>	<u>193,913.96</u>

CURRENT OPERATING EXPENSE (Continued)
For the Year Ended August 31, 1950

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT G
EDUCATIONAL AND GENERAL (Continued)				
ACTIVITIES RELATING TO INSTRUCTION—HOSPITAL				
Administration.....	262,801.11	112,387.39	150,413.72	
Dietary.....	400,387.19	186,050.16	214,337.03	
Household and Property				
Laundry.....	51,822.10	49,677.07	2,145.03	
Housekeeping.....	151,754.23	117,619.06	34,135.17	
Plant.....	126,623.98	46,206.35	80,417.63	
	330,200.31	213,502.48	116,697.83	
Professional Care—General				
Medical and Surgical Service.....	176,987.93	61,332.44	115,655.49	
Medical Library for Residents and Interns.....	3,000.00	2,400.00	600.00	
Nursing Care.....	593,665.19	591,994.37	1,670.82	
Medical Records.....	28,076.61	20,934.30	7,142.31	
Pharmacy.....	78,985.96	11,934.96	67,051.00	
Central Sterile Supply.....	11,306.00	10,957.64	348.36	
	892,021.69	699,553.71	192,467.98	
Professional Care—Special				
Operating Rooms.....	98,047.76	58,884.33	39,163.43	
Delivery Rooms.....	43,644.40	36,049.78	7,594.62	
Laboratories.....	105,842.77	95,996.83	9,845.94	
X-Ray.....	83,557.17	54,790.71	28,766.46	
Electroencephalography.....	4,840.71	4,186.23	654.48	
Anesthesiology.....	66,223.39	52,443.81	13,779.58	
Physical Medicine.....	31,685.28	30,890.60	794.68	
Urology.....	1,893.65	1,054.00	839.65	
Dentistry.....	909.81		909.81	
	436,644.94	334,296.29	102,348.65	

Out-Patient Department			
General Services	17,619.97	17,411.44	208.53
Medicine	15,278.72	10,017.92	5,260.80
Surgery	10,396.02	6,387.52	4,008.50
Gynecology and Obstetrics ..	2,905.54	2,576.42	329.12
Ophthalmology	14,307.85	9,587.93	4,719.92
Ear, Nose, Throat	22.34	.....	22.34
Urology	2,584.39	1,440.00	1,144.39
Social Service	2,496.58	2,486.65	9.93
Nursing Care	6,467.26	6,467.26	.....
Housekeeping	13,801.89	13,801.89	.....
Emergency	8,639.84	8,639.84	.....
	<u>94,520.40</u>	<u>78,816.87</u>	<u>15,703.53</u>
Auxiliary Enterprises			
Ambulance Service	70.00	.....	70.00
Residents' and Interns' Room Charges	(-12,100.00)	.....	(-12,100.00)
	<u>(-12,030.00)</u>	.....	<u>(-12,030.00)</u>
Depreciation (Exhibit G)			
Building (Schedule 8)	60,000.00	.....	60,000.00
Equipment (Schedule 9)	108,000.00	.....	108,000.00
	<u>168,000.00</u>	.....	<u>168,000.00</u>
TOTAL HOSPITAL—EXHIBIT B	<u>2,572,545.64</u>	<u>1,624,606.90</u>	<u>947,938.74</u>
ACTIVITIES RELATING TO INSTRUCTION—POST-GRADUATE			
MEDICAL EDUCATION	<u>18,004.03</u>	<u>8,549.00</u>	<u>9,455.03</u>

CURRENT OPERATING EXPENSE (Continued)
For the Year Ended August 31, 1950

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT C
AUXILIARY ENTERPRISES				
RESIDENCE HALLS				
Nurses Home—Everglades Apartments.....	11,221.69	7,957.16	3,264.53	
Staughton Hall.....	39,279.22	13,468.82	25,810.40	
Strong Hall.....	23,083.83	10,956.43	12,127.40	
Veterans Housing.....	9,480.36	1,790.10	7,690.26	
Wellington Hall.....	2,976.83	1,948.63	2,028.20	
2025 H Street, NW.....	86,041.93	35,121.14	50,920.79	
SOCIETY HALLS				
2112 G Street, NW.....	856.31	120.00	736.31	
2129 G Street, NW.....	2,602.51	650.00	1,952.51	
2131 G Street, NW.....	152.35	100.00	52.35	
802 21st Street, NW.....	2,003.65	350.00	1,653.65	
	5,614.82	1,220.00	4,394.82	
OTHER				
Book Store, Student Store, Student Union.....	94,270.71	22,490.45	71,780.26	
Duplicating Bureau.....	1,841.80	.....	1,841.80	
Lisner Auditorium.....	19,143.21	11,084.52	8,058.69	385.23
Washington Counseling Center.....	28,774.52	26,991.33	1,797.96	385.23
	144,030.24	60,566.30	83,078.71	
TOTAL—EXHIBIT B.....	235,686.99	96,907.44	138,394.32	385.23

NON EDUCATIONAL

SCHOLARSHIPS.....	23,705.83	23,705.83	
INTEREST ON NOTES PAYABLE.....	20,010.43	20,010.43	
MARKERS FOR HOSPITAL.....	2,974.75	2,974.75	
TOTAL—EXHIBIT B.....	<u>46,691.01</u>	<u>46,691.01</u>	
 TOTAL EXPENSE—EXHIBIT B.....	 6,522,545.65	 2,057,219.92	 <u>71,814.87</u>
 Less overhead expense charged to various departments and included in "Other Expense" above.....	 <u>91,299.80</u>		
 TOTAL EXPENSE, ADJUSTED—EXHIBIT B.....	 <u>6,431,245.85</u>		

MISCELLANEOUS ASSETS AND LIABILITIES

August 31, 1950

EXHIBIT A

ACCOUNTS RECEIVABLE		
Veterans Administration—Veterans Tuition, Books, Supplies.....	264,740.14	
“ Washington Counseling Center.....	1,413.75	
Regular Students—Tuition and Other Fees.....	9,725.00	
Dormitory Rents.....	717.30	
Hospital.....	283,695.26	
Less Provision for Doubtful Accounts.....	35,000.00	
United States Government—Organized Research.....	248,695.26	
Vendors' Debit Balances.....	86,127.31	
National Committee on Accrediting.....	1,810.55	
	1,061.17	
	<u>614,290.48</u>	
PREPAID EXPENSE		
University Supplies—Stockroom.....	41,537.00	
“ Student Store.....	16,556.00	
“ Book Store.....	12,292.00	
“ Duplicating Bureau.....	156.00	
“ Microscopes.....	916.26	
“ Miscellaneous.....	4,558.18	
Hospital—Supplies—Medical and Surgical.....	67,981.00	
“ Pharmacy.....	15,447.00	
“ Ophthalmology.....	8,568.00	
“ Maintenance and Housekeeping.....	5,120.00	
“ Linens and Bedding.....	6,420.00	
“ Office.....	3,693.00	
“ Food.....	7,568.00	
“ Insurance.....	6,808.87	
	<u>121,605.87</u>	
	197,621.31	
DEFERRED INCOME		
Post Graduate Medical Education.....	42,279.19	
Student Fees.....	14,723.00	
Auditorium.....	1,100.00	
Student Council.....	1,382.38	
	<u>59,484.57</u>	

ASSETS OF LOAN FUNDS

August 31, 1950

FUNDS	TOTAL	CASH	LOANS RECEIVABLE
D.C.—D.A.R. Loan Fund.....	3,071.92	2,825.52	246.40
George Washington Law Association Loan Fund....	786.10	242.10	544.00
Harris Loan Fund	400.00	400.00	
Home Economics Loan Fund.....	382.35	382.35	
Kellogg Medical School Loan Fund.....	16,531.79	10,530.55	6,001.24
Sutherland Medical School Loan Fund.....	1,200.00	700.00	500.00
University Loan Fund	8,165.72	6,706.62	1,459.10
War Loan Fund	6,751.12	.....	6,751.12
TOTAL—EXHIBIT A.....	37,289.00	21,787.14	15,501.86

ASSETS OF ENDOWMENT FUNDS CONTROLLED BY THE UNIVERSITY

August 31, 1950

CONSOLIDATED ENDOWMENT FUNDS

	BONDS	DESCRIPTION	%	DUE	VALUE	
					PAR	MARKET
American Telephone and Telegraph Co		Convertible Debenture	2 3/4	1961	12,000	13,050.00
Atchafalaya, Teton and Santa Fe Ry. Co		General Mortgage	4	1995	2,000	2,580.00
Baltimore and Ohio R. R. Co., Pittsburgh, Lake Erie and W. Va. System		Refunding Mortgage, Series A	4	1980	5,000	4,500.00
Capital Transit Co		First and Refunding Mortgage A	4	1964	8,000	7,920.00
Great Northern Railway Co		General Mortgage, Series D	4 1/2	1976	25,000	30,500.00
Largent and Meyers Tobacco Co		Debenture	5	1951	12,000	12,340.00
New York Central Railroad Co		Refunding and Improvement A	4 1/2	2013	20,000	20,700.00
Pennsylvania Railroad Co		General Mortgage, Series F	4 1/4	1984	25,000	24,750.00
Pennsylvania Railroad Co		Consolidated Mortgage	4 1/2	1940	1,000	1,140.00
Southern Railway Co		Development and General Mgt. A	6 1/2	1956	2,000	2,150.00
State Loan and Finance Corporation		Treasury Bonds	5	1960	10,000	9,900.00
United States of America		Treasury Bonds	2 1/4	1959-62	50,000	50,500.00
United States of America		Treasury Bonds	2 1/2	1967-72	10,000	10,100.00
United States of America		Savings Bonds, Series G	2 1/2	10-1-54	23,000	22,172.00
United States of America		Savings Bonds, Series G	2 3/4	11-1-54	47,000	45,308.00
United States of America		Savings Bonds, Series G	2 1/2	1-1-55	17,000	16,888.00
United States of America		Savings Bonds, Series G	2 1/2	4-1-55	36,500	35,076.00
United States of America		Savings Bonds, Series G	2 1/2	9-1-55	41,100	39,374.00
United States of America		Savings Bonds, Series G	2 1/2	10-1-55	7,500	7,185.00
United States of America		Savings Bonds, Series G	2 1/2	2-1-56	9,000	8,622.00
United States of America		Savings Bonds, Series G	2 1/2	2-1-58	10,000	9,470.00
United States of America		Savings Bonds, Series G	2 1/2	7-1-58	35,000	33,145.00
United States of America		Savings Bonds, Series G	2 1/2	8-1-56	200	144.00
United States of America		Savings Bonds, Series F	2.53	11-1-58	200	153.00
United States of America		General Mortgage	5	1960	6,000	7,240.00
Washington and Annapolis Light Co		Guaranteed First Mortgage Rev	4	2361	26,000	15,860.00
West Shore Railroad Co						430,367.00
						444,953.00

STOCKS - PREFERRED	%	SHARES	8,900.00	10,000.00
Allis-Chalmers Manufacturing Co.	3 1/4	100	20,040.00	17,496.70
American Smelting and Refining Co.	7	120	11,900.00	10,750.00
American Viscose Corporation	5	100	11,100.00	10,600.00
Appalachian Electric Power Co.	4 1/2	100	6,480.00	5,987.50
Atchafalaya, Toiyah and Santa Fe Ry. Co.	5	60	7,000.00	8,500.00
Cleveland and Pittsburgh R. R. Co.	7	100	22,000.00	21,000.52
Connecticut Light and Power Co.	3 1/2	400	24,240.00	24,000.00
Corning Glass Works	4	240	9,454.00	10,412.00
Detroit, Hillsdale and S. W. R. R. Co.	3 1/2	163	20,600.00	19,600.00
General American Transportation Corp.	4	200	21,000.00	20,000.00
General Motors Corporation	...	100	12,400.00	12,521.25
General Motors Corporation	...	50	4,500.00	5,180.00
General Shoe Corporation	6	100	11,100.00	11,700.00
Gould and Stuck Telegraph Co.	3 3/4	50	4,750.00	5,150.00
Hecht Co.	3 1/2	200	21,000.00	20,550.00
H. J. Heinz Co.	7	100	17,800.00	18,204.43
International Harvester Co.	...	200	19,800.00	20,700.00
May Department Stores	...	200	20,400.00	20,670.70
McGraw-Hill Companies	3 1/2	100	10,100.00	9,835.34
McKesson and Robbins, Inc.	...	105	10,200.00	10,497.50
Merkel and Co., Inc.	4 1/2	200	18,800.00	21,520.34
Oliver Corporation	4.8	1,000	28,000.00	27,250.00
Pacific Gas and Electric Co.	4	200	20,600.00	20,172.40
Panhandle Eastern Pipe Line Co.	3.7	200	18,800.00	20,500.00
Pennsylvania Electric Co.	3.8	100	10,400.00	10,270.00
Philadelphia Electric Co.	3.6	304	14,288.00	15,732.00
Potomac Electric Power Co.	...	550	14,300.00	15,406.87
Public Service Electric and Gas Co.	...	400	13,200.00	13,584.11
Rayonier, Inc.	3.6	100	9,700.00	10,017.84
R. J. Reynolds Tobacco Co.	...	1	100.00	100.00
Rogers, George A., and Co.	4.56	800	24,000.00	21,000.00
Southern California Edison Co.	3 1/2	200	20,200.00	20,500.00
Sterling Drug, Inc.	...	300	31,800.00	30,681.00
Virginia Electric and Power Co.	\$4.04 Cumulative	...	519,042.00	520,122.30

ASSETS OF ENDOWMENT FUNDS—CONTROLLED BY THE UNIVERSITY (Continued)

August 31, 1950

CONSOLIDATED ENDOWMENT FUNDS (Continued)

	VALUE		
	SHARES	MARKET	BOOK
STOCKS—COMMON			
Allis-Chalmers Manufacturing Co.	500	16,500.00	21,347.00
American Gas and Electric Co.	334	15,030.00	13,613.50
Atlantic City Electric Co.	54	972.00	934.50
Bank of America, National Trust and Savings Association.	117	3,042.00	2,604.71
Capital Transit Co.	27	972.00	2,835.00
Chrysler Corporation.	200	13,600.00	11,500.25
Commonwealth Edison Co.	640	17,920.00	18,190.00
Continental Can Co., Inc.	31	1,023.00	2,375.38
Continental Illinois National Bank and Trust Co.	270	24,030.00	16,945.31
Continental Oil Co.	210	15,540.00	9,454.95
General Electric Co.	100	4,700.00	5,405.00
General Motors Corporation.	500	45,000.00	26,523.75
Goodyear Tire and Rubber Co.	200	11,600.00	9,411.57
International Nickel Co. of Canada, Ltd.	200	6,600.00	12,035.25
Kennecott Copper Corporation.	300	18,900.00	18,227.50
Mergenthaler Linotype Co.	6	336.00	588.00
National City Bank of New York	39	1,716.00	3,517.04
New York Air Brake Co.	200	7,000.00	8,646.84
Phelps Dodge Corporation	200	11,200.00	7,857.25
R. J. Reynolds Tobacco Co.—New Class B.	100	3,400.00	5,112.50
Riggs National Bank	13	4,745.00	4,875.00
Security Storage Co.	67	7,973.00	5,058.50
Socoy Vacuum Oil Co.	1,530	35,190.00	23,687.16
Southern Pacific Co.	50	2,950.00	1,520.55
Standard Oil Co. of California.	330¾	23,153.00	11,796.85
Travelers Insurance Co.	40	17,200.00	16,045.68
United Gas Corporation.	800	14,400.00	14,150.79
		324,692.00	274,259.81

TRUST NOTES RECEIVABLE

	%	DUE	
Bronaugh, Alfred T. and Catherine—Secured by lot 21, square 2836.....	4 1/2	7- 9-52	500.00
Edmund Property, Inc.—Secured by lot 4, square 15.....	4	11-19-52	6,500.00
Grady, Dallas E.—Secured by lot 6, square 3953.....	4	4- 9-51	6,000.00
Henderson, James M.—Secured by lots 33-34, square 3187.....	4	2-15-52	1,000.00
Snow, Chester A.—Secured by lot 77, square 162.....	4	10-31-52	8,000.00
Swartzell, John M.—Secured by lot 82, square 33.....	4	7-15-51	2,000.00
Wollberg, Ben—Secured by lot 9, square 16.....	4	12- 4-51	3,500.00
			<u>27,500.00</u>

REAL ESTATE

Strong Hall—620 21st Street, NW. Lots 19-20-818-819, square 80.....	223,584.46	223,584.46
CASH.....	<u>31,176.16</u>	<u>31,176.16</u>
	<u>1,556,361.62</u>	

TOTAL.....		<u><u>1,521,595.73</u></u>
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ASSETS OF ENDOWMENT FUNDS—CONTROLLED BY THE UNIVERSITY (Continued)

August 31, 1950

SCOTTISH RITE FUND

VALUE

BONDS	DESCRIPTION	%	DUE	VALUE		
				PAR	MARKET	BOOK
American Telephone and Telegraph Co.	Debtenture	2 1/4	1980	25,000	25,000.00	25,000.00
Capital Transit Co.	First and Refunding Mortgage A.	4	1964	10,000	9,900.00	10,000.00
Cleveland Union Terminals Co.	First Mortgage Sinking Fund C.	4 1/2	1977	24,000	25,440.00	23,460.00
Lexington and Eastern Railway Co.	First Mortgage	5	1965	12,000	14,520.00	12,844.00
Lidgett and Myers Tobacco Co.	Debtenture	3	1951	3,000	3,090.00	3,031.00
Northern Pacific Railway Co.	Prior Lien Railway and Land Grant	4	1997	25,000	27,500.00	26,856.00
Protestant Episcopal Cathedral Foundation of D. C.	Sinking Fund Subordinated Deb.	3 1/2	1951	3,000	3,000.00	3,000.00
State Loan and Finance Corporation	Treasury Bonds	5	1960	5,000	4,950.00	5,000.00
United States of America	Treasury Bonds	2	1950-52	103,000	103,000.00	103,000.00
United States of America	Treasury Bonds	2	1951-53	20,000	20,200.00	20,000.00
United States of America	Treasury Bonds	2 1/4	1959-62	25,000	25,250.00	25,000.00
United States of America	Treasury Bonds	2 1/2	1967-72	25,000	25,250.00	25,000.00
United States of America	Savings Bonds, Series G.	2 1/2	10-1-53	50,000	48,500.00	50,000.00
United States of America	Savings Bonds, Series G.	2 1/2	10-1-54	100,000	96,400.00	100,000.00
United States of America	Savings Bonds, Series G.	2 1/2	1-1-55	100,000	96,400.00	100,000.00
United States of America	Savings Bonds, Series G.	2 1/2	2-1-56	1,000	958.00	1,000.00
United States of America	General Mortgage	5	1960	4,000	4,840.00	4,471.00
Washington Gas Light Co.	Guaranteed First Mortgage Reg.	4	2361	14,000	8,540.00	12,355.00
West Shore Railroad Co.					542,738.00	550,017.00

STOCKS—PREFERRED

	%	SHARES	MARKET	BOOK
American Viscose Corporation	5	100	11,900.00	10,750.00
Consolidated Gas Electric Light and Power Co. of Baltimore	4	130	13,780.00	13,312.75
Dresser Industries, Inc.	3 3/4	200	17,000.00	20,000.00
Federated Department Stores, Inc.	4 1/4	100	10,500.00	9,895.00
General Motors Corporation	4 1/4	40	4,200.00	4,000.00
Cumulative				
Cumulative, Series C				
Cumulative Convertible				
Cumulative				
\$3.75 Cumulative				

General Shoe Corporation.....	\$3.50 Cumulative.....	50	4,500.00	5,120.50
Goodyear Tire and Rubber Co.....	\$5 Cumulative Convertible.....	100	10,500.00	10,960.34
Hecht Co.....	Cumulative.....	150	14,250.00	15,450.00
International Harvester Co.....	Cumulative.....	50	8,900.00	9,124.08
Le Tourneau, R. G., and Co.....	\$4 Cumulative.....	200	11,400.00	20,900.00
McKesson and Robbins, Inc.....	\$7 Cumulative, Class A.....	100	10,100.00	9,860.25
Montgomery Ward and Co.....	Cumulative.....	100	18,500.00	20,535.65
Pacific Telephone and Telegraph Co.....	Cumulative.....	200	30,000.00	32,485.99
Philadelphia Electric Co.....	Cumulative.....	100	10,400.00	10,270.00
Philip Morris and Co., Ltd., Inc.....	Cumulative.....	138	14,490.00	14,007.00
Potomac Electric Power Co.....	Cumulative, Series A, Par Value \$50.....	300	14,100.00	15,525.00
R. J. Reynolds Tobacco Co.....	Cumulative.....	200	19,400.00	20,018.77
			<u>223,920.00</u>	<u>242,815.31</u>

STOCKS--COMMON

Cincinnati Milling Machine Co.....	500	15,500.00	18,609.10
Commonwealth Edison Co.....	800	22,400.00	21,095.00
Continental Oil Co.....	500	37,000.00	15,725.25
General Electric Co.....	400	18,800.00	17,210.00
Goodyear Tire and Rubber Co.....	200	11,600.00	9,649.34
International Nickel Co. of Canada, Ltd.....	300	9,900.00	13,032.50
Montgomery Ward and Co.....	750	40,500.00	32,577.25
Riggs National Bank.....	125	45,625.00	32,625.00
Standard Oil of California.....	110 1/4	7,717.00	2,600.00
Standard Oil of New Jersey.....	536	43,416.00	37,854.29
Underwood Corporation.....	300	12,900.00	20,940.19
Union Carbide and Carbon Corporation.....	900	40,500.00	25,122.50
United Gas Corporation.....	700	12,600.00	12,381.66
		<u>318,458.00</u>	<u>260,322.08</u>
CASH.....		6,754.99	6,754.99
		<u>1,091,870.99</u>	
TOTALS } SCOTTISH RITE FUND.....			1,059,909.38
RESERVE FOR PROTECTION OF SCOTTISH RITE FUND INVESTMENTS.....			

ASSETS OF ENDOWMENT FUNDS—CONTROLLED BY THE UNIVERSITY (Continued)
August 31, 1950
SUMMARY OF ASSETS OF ENDOWMENT FUNDS—CONTROLLED BY THE UNIVERSITY

Funds	Total Assets	Cash	INVESTMENTS					Trust Notes	Real Estate
			Total	Bonds	Stocks		Common		
					Preferred				
Consolidated	1,521,595.73	31,176.16	1,490,419.57	444,953.00	520,122.30	274,259.81	27,500.00	223,584.46	
Scottish Rite	1,059,909.38	6,754.99	1,053,154.39	550,017.00	242,815.31	260,322.08			
TOTALS—Exhibit A	2,581,505.11	37,931.15	2,543,573.96	994,970.00	762,937.61	534,581.89	27,500.00	223,584.46	

ENDOWMENT FUNDS—CONTROLLED BY OTHER TRUSTEES

August 31, 1950

FUNDS	TRUSTEES	BOOK VALUE
Andrews Scholarship Fund.....	American Security and Trust Co.....	5,139.98
Fry Professorship Fund.....	National Savings and Trust Co.....	102,992.49
Harvey Scholarship Fund.....	Washington Loan and Trust Co.....	5,031.97
Sanders Fellowship Fund.....	National Savings and Trust Co.....	206,602.87
Sharpe Medical School Fund.....	National Savings and Trust Co.....	8,334.13
Spencer Scholarship Fund.....	Northern Trust Co., Chicago.....	7,434.20
TOTAL—EXHIBIT A.....		<u>335,535.64</u>

ASSETS OF PLANT FUNDS

August 31, 1950

PAIRO FUND

	BONDS	DESCRIPTION	VALUE			BOOK
			%	Due	PAR	MARKET
		First and Refunding Mortgage	3 1/2	2000	6,000	3,660.00
		First Mortgage, Series A	4 1/2	1977	5,000	5,159.00
		Treasury Notes, Series E	1 1/4	8-1-51	50,000	49,975.80
		Treasury Bonds	2 1/2	1944-49	500	502.00
		Savings Bonds, Series G	2 1/2	9-1-53	700	700.00
		Savings Bonds, Series G	2 1/2	2-1-54	500	500.00
		Savings Bonds, Series G	2 1/2	11-1-56	300	300.00
						61,741.80

STOCKS—COMMON		SHARES	MARKET
American Security and Trust Co.		200	8,220.00
Capital Transit Co.		200	14,400.00
Mergenthaler Linotype Co.		150	15,806.25
National City Bank of New York		61	2,684.00
Pennroad Corporation		100	1,100.00
Riggs National Bank		52	1,300.00
			18,980.00
			44,964.00

CASH..... 6,535.58

TOTALS..... 112,219.58

130,626.63

CONSOLIDATED PLANT FUNDS

Bonds	%	Due	Par	
State Loan and Finance Corporation Sinking Fund Subordinated Debenture	5	1960	10,000	9,900.00
United States of America Treasury Notes, Series E	11 1/4	8-1-51	50,000	50,000.00
United States of America Savings Bonds, Series G	2 1/2	11-1-54	3,000	2,892.00
United States of America Savings Bonds, Series G	2 1/2	10-1-55	1,000	958.00
United States of America Savings Bonds, Series G	2 1/2	10-1-57	1,700	1,610.00
United States of America Savings Bonds, Series G	2 1/2	4-1-61	18,600	18,191.00
				83,351.00
STOCKS—PREFERRED				
Garfinckel and Co	%	SHARES		
Cumulative Convertible	4 1/2	750		13,037.50
STOCKS—COMMON				
Garfinckel and Co		2,370		42,660.00
Glidden Co		102		2,652.00
				45,312.00
CASH				17,766.72
TOTALS				160,139.72
				162,515.01

SUMMARY OF ASSETS OF PLANT FUNDS

FUNDS	Total Assets	Cash	INVESTMENTS		
			Total	Bonds	Preferred Stocks
Consolidated Plant Funds	162,515.01	17,766.72	144,748.29	84,275.79	13,037.50
Pairo Fund	130,626.63	6,535.58	124,091.05	61,741.80	
TOTALS—EXHIBIT A	293,141.64	24,302.30	268,839.34	146,017.59	13,037.50
					109,784.25

LAND AND BUILDINGS

For the Year Ended August 31, 1950

Building or Location	Lot	Square	Year Acquired or Erected	Balance August 31, 1949	Net Additions	Balance August 31, 1950
Biological Sciences Building C	Part of 834	102	1914-35	151,129.97	.....	151,129.97
Corcoran Hall	Part of 834	102	1919-24	327,481.92	.....	327,481.92
	5-13-15-17-19					
	24-28-29					
	800-801-802					
	805 thru 821					
	823-824-829-830					
	832-833-834-836					
	838-839-842					
Field House Site		56	1936-48	260,133.03	.....	260,133.03
	Part of 834	102	1924-25	58,331.44	.....	58,331.44
	Part of 841	79	1918-38	239,035.63	.....	239,035.63
	Entire square	54	1945	7,389,564.00	.....	7,389,564.00
Gymnasium	838-843	79	1929-41	823,982.91	.....	823,982.91
Hall of Government	Part of 834	102	1912-39	372,230.19	.....	372,230.19
Hospital	Part of 834	102	1923-30	57,583.87	.....	57,583.87
Lisner Auditorium	Part of 834	102	1923-30	57,583.87	.....	57,583.87
Lisner Hall	Part of 834	102	1923-30	57,583.87	.....	57,583.87
Mechanical Laboratory	806 thru 811	55	1947	401,500.00	.....	401,500.00
Nurses Home (Schedule 8—Page 4)	17 thru 39					
	800 thru 817					
Parking Lot	822 thru 826	41	1945-50	338,505.50	179,295.00	517,800.50
	27-28-816-817	79	1944	95,482.17	.....	95,482.17
Pharmacology Laboratory	Part of 843	79	1947	26,075.12	.....	26,075.12
Physics Laboratory	Part of 834	102	1936	11,700.00	.....	11,700.00
President's Office						
School of Medicine, Cancer Clinic						
(Schedule 8—Page 4)						
Shop, Stockroom	43	250	1882-1932	995,706.34	.....	995,706.34
Social Sciences Building D	53	101	1943	26,761.24	.....	26,761.24
Sorority Hall—2129 G Street, NW	Part of lot 834	102	1922-36	269,279.60	.....	269,279.60
	805	79	1936	36,989.72	.....	36,989.72

Sorority Hall—2131 G Street, NW	Part of 8	79	1955	25,500.00	.....	25,500.00
Sorority Hall 802 21st Street, NW	35	77	1938	13,000.00	.....	13,000.00
Stoughton Hall	834-835	79	1941	51,600.00	.....	51,600.00
Stockton Hall	Part of 834	102	1920-25	279,325.93	.....	279,325.93
Student Activities Building	41	79	1947	75,000.00	.....	75,000.00
Student Store	Part of 843	79	1949	48,105.49	.....	48,105.49
Student Union Building	836	79	1947-48	451,129.16	.....	451,129.16
Veterans Housing	15	55	1948	150,000.00	.....	150,000.00
Wells Hall			1947	209,047.72	.....	209,047.72
G Street, NW	C	121	1949	20,000.00	.....	20,000.00
2002	27	103	1949	33,600.00	.....	33,600.00
2024	16	103	1922	14,955.00	.....	14,955.00
2026	15	103	1929	15,074.96	.....	15,074.96
2033	Part of 834	102	1922	32,500.00	.....	32,500.00
2106	817	80	1937	19,000.00	.....	19,000.00
2108	41	80	1946	31,500.00	.....	31,500.00
2109	Part of 844	79	1938	55,646.21	.....	55,646.21
2110	40	80	1949	50,000.00	.....	50,000.00
2111	Part of 844	79	1938	60,000.00	.....	60,000.00
2112	816	80	1948	30,000.00	.....	30,000.00
2114	815	80	1949	47,250.00	.....	47,250.00
2116	A	80	1946	20,500.00	.....	20,500.00
2118	B	80	1946	17,500.00	.....	17,500.00
2121	804	79	1939	10,146.50	.....	10,146.50
2135	807	79	1943	14,000.00	.....	14,000.00
2143 (deposit)	40	79	1949	1,000.00	.....	1,000.00
2222	25	57	1948	8,800.00	.....	8,800.00
2313-15-17-19-21	803-829	42	1947	23,400.00	.....	23,400.00

LAND AND BUILDINGS—(Continued)
For the Year Ended August 31, 1950

Building or Location	Lot	Square	Year Acquired or Erected	Balance August 31, 1949	Net Additions	Balance August 31, 1950
H Street, NW—1909	800	119	1948	32,500.00		32,500.00
" " 1911-13	3	119	1948	66,000.00	1,711.70	67,711.70
" " 1923	803	119	1949	13,000.00	38,000.00	38,000.00
" " 2011	806	101	1943			13,000.00
" " 2014-16-18-18½	Part of 834	102	1922	98,516.71		98,516.71
" " 2020-22-24-26	52	101	1945	21,000.00		21,000.00
" " 2025	813	101	1941	11,000.00		11,000.00
" " 2027	814	101	1945	11,500.00		11,500.00
" " 2029	815	101	1948	13,000.00		13,000.00
" " 2031	817	101	1940	23,500.00		23,500.00
" " 2037	802	77	1950		1,500.00	1,500.00
" " 2111	804	77	1940	12,500.00		12,500.00
" " 2113	805	77	1944	12,431.25		12,431.25
" " 2115	809	77	1946	7,500.00		7,500.00
" " 2127	811	77	1948	15,500.00		15,500.00
" " 2137-39	D	79	1935	1,500.00		1,500.00
" " 2142	815	79	1940	3,000.00		3,000.00
" " 2142½	804	55	1945	6,650.00		6,650.00
" " 2209	16	55	1948	16,125.00		16,125.00
" " 2211	17	55	1946	13,000.00		13,000.00
" " 2213	18-805	55	1944	15,500.00		15,500.00
" " 2215-19	817	42	1942	10,750.00		10,750.00
" " 2300	43	42	1948	7,900.00		7,900.00
" " 2308	814	42	1948	7,000.00		7,000.00
" " 2312	812	42	1947	9,600.00		9,600.00
" " 2316						

J Street, NW—2012	830	101	1945	25,000.00		25,000.00
	829	101	1945	25,000.00		25,000.00
	21	101	1946	50,000.00		50,000.00
	840	101	1942	10,000.00		10,000.00
	27	77	1947	11,800.00		11,800.00
	55-56	77	1947	12,500.00		12,500.00
	826	77	1948	15,000.00		15,000.00
	825	77	1945	5,000.00		5,000.00
	22	55	1949	12,000.00		12,000.00
K Street, NW—2300	Entire square	39	1948	278,735.00		278,735.00
New Hampshire Avenue, NW—905						
	813	40	1949		9,500.00	9,500.00
Pennsylvania Avenue, NW—						
	12-19	119	1949		180,000.00	180,000.00
	812	119	1950		70,000.00	70,000.00
	811	119	1949	70,000.00		70,000.00
	808-809	119	1949	5,000.00		
	800-801-840	75	1945	103,000.00	(-5,000.00)	103,000.00

LAND AND BUILDINGS—(Continued)

For the Year Ended August 31, 1950

Building or Location	Lot	Square	Year Acquired or Erected	Balance August 31, 1949	Net Additions	Balance August 31, 1950
19th Street, NW—808	20	119	1949		30,000.00	30,000.00
20th Street, NW—700	26	102	1931	17,500.00		17,500.00
" " " " " "	23	102	1950		29,500.00	29,500.00
" " " " " "	42	102	1929	14,240.00		14,240.00
" " " " " "	41	102	1930	14,500.00		14,500.00
" " " " " "	40	102	1929	13,500.00		13,500.00
" " " " " "	828-830	102	1929	20,000.00		20,000.00
21st Street, NW—604	23	80	1946	13,000.00		13,000.00
" " " " " "	21-22	80	1935	12,500.00		12,500.00
" " " " " "	Part of 834	102	1929	24,000.00		24,000.00
" " " " " "	Part of 841	79	1931	40,000.00		40,000.00
" " " " " "	Part of 841	79	1933	8,885.00		8,885.00
" " " " " "	Part of 841	79	1939	16,422.00		16,422.00
" " " " " "	828	79	1950		50,000.00	50,000.00
" " " " " "	31	77	1938	9,000.00		9,000.00
" " " " " "	840	77	1944	13,000.00		13,000.00
" " " " " "	814					

22nd Street, NW—715	24	1939	8,150.00		8,150.00
" 717	25	79	10,143.00		10,143.00
" 725	812-813	79	8,750.00		8,750.00
" 727	814	79	4,750.00		4,750.00
" 731	34	79	7,600.00		7,600.00
" 800-802	802-803	79	18,500.00		18,500.00
" 806	800	55	9,000.00		9,000.00
" 808	C	55	14,000.00		14,000.00
" 810	839	55	18,750.00		18,750.00
" 813	817	77	10,800.00		10,800.00
" 815-17	818	77	17,000.00		17,000.00
" 820	830	55	7,000.00		7,000.00
" 822	829	55	9,250.00		9,250.00
" 837 (Refund)	51	77	500.00	(-500.00)	
" 909	815	75	11,000.00	12,000.00	11,000.00
" 911	816	75			12,000.00
" 921	821	75	12,500.00		12,500.00
23rd Street, NW—611-613	29-821				
" 706	822-824-825	57	13,500.00		13,500.00
" 716	837	42	3,675.00		3,675.00
" 718	825	42	7,425.00		7,425.00
" 734	824	42	11,000.00		11,000.00
" 736	819	42	4,500.00		4,500.00
" 908	818	42	3,000.00		3,000.00
	30	40	500.00	17,250.00	17,750.00
24th Street, NW—737-739	808	42	11,440.00		11,440.00
Less Depreciation—Hospital			15,022,026.09	836,936.16	15,858,962.25
TOTAL—EXHIBIT A					120,000.00
					15,738,962.25

TRUST NOTES PAYABLE

August 31, 1950

EQUITABLE LIFE ASSURANCE SOCIETY Secured by Nurses Home. Due \$7,875 each May 1 and November 1 including interest at 4%.....	199,909.29
WASHINGTON LOAN AND TRUST CO. Secured by School of Medicine and Cancer Clinic. Due February 21, 1955. Interest 4%.....	<u>100,000.00</u>
TOTAL—EXHIBIT A.....	<u><u>299,909.29</u></u>

EQUIPMENT

For the Year Ended August 31, 1950

	BALANCE AUGUST 31, 1949	NET ADDITIONS	BALANCE AUGUST 31, 1950
Administration.....	151,884.72	24,759.42	176,644.14
Duplicating Bureau.....	1,774.50		1,774.50
George Washington University Cancer Clinic.....	3,205.00		3,205.00
Gilbert Stuart Painting.....		17,645.61	17,645.61
Gymnasium.....	2,927.37		2,927.37
Hospital.....	1,120,663.30	46,611.25	1,167,274.55
Instruction—General.....	134,535.32	12,906.60	147,441.92
Law School.....	1,739.63		1,739.63
Library Books—Carnegie Library.....		75,000.00	75,000.00
“ “ General.....	109,462.24	10,575.22	120,037.46
“ “ Law School.....	75,423.70	5,300.07	80,723.77
“ “ School of Medicine.....	19,828.08	2,428.86	22,256.94
Lisner Auditorium.....	91,247.78	3,596.50	94,844.28
Lisner Hall.....	27,111.52	189.30	27,300.82
Nurses Home.....	7,850.41	1,851.19	9,701.60
Residence Hall—2025 H Street, NW.....	2,992.84		2,992.84
School of Engineering.....	61,138.10	11,171.09	72,309.19
School of Medicine.....	67,541.74	4,198.46	71,740.20
School of Pharmacy.....	7,980.56	789.53	8,770.09
Staughton Hall.....	10,464.16	3,366.76	13,830.92
Strong Hall.....	18,117.63		18,117.63
Student Club.....	13,027.86		
Transferred to Student Union.....		(-5,000.00)	
Equipment sold.....		(-8,027.86)	
Student Store.....		4,367.96	4,367.96
Student Union Building.....	18,773.23	13,276.92	32,050.15
Veterans Housing.....	20,000.00		20,000.00
Welling Hall.....	6,633.95	624.63	7,258.58
	<u>1,974,332.64</u>	<u>225,631.51</u>	<u>2,199,964.15</u>
Less Depreciation—Hospital Equipment.....			198,000.00
TOTAL—EXHIBIT A.....			<u>2,001,964.15</u>

SCHEDULE 9

CURRENT FUNDS RESTRICTED
For the Year Ended August 31, 1950
ORGANIZED RESEARCH FUNDS

Funds	Balance August 31, 1949	Receipts	Disbursements			Balance August 31, 1950
			Salaries	Other Expense	Total	
SCHOOL OF MEDICINE		14,580.00	1,943.28	73.05	2,016.33	12,563.67
Abbott, Lilly, and Upjohn	7.51			4.00	4.00	3.51
American Allergy Foundation		500.00		34.50	34.50	465.50
Arthritis						
Baxter Laboratory—Dr. Blades	2,375.27	6,264.00	5,857.64	464.00	6,321.64	2,317.63
Dr. Blumenthal	166.74		166.74		166.74	
Burroughs-Wellcome and Co.		2,500.00	899.96	1,010.00	1,909.96	590.04
Campbell Products	244.00	400.00				644.00
Cancer Control	969.81	160.00		200.00	200.00	929.81
Cardiology	466.35	2,900.00	1,956.52	148.55	2,105.07	1,261.28
Cereals Cummings	2,207.06		1,687.50	322.67	2,010.17	196.89
Freeman, Keen		11,293.04	3,667.50	54.96	3,722.46	7,570.58
Hopkins, Fred T., and Son	99.95			72.52	72.52	27.43
Hutchins, Helen F.	2,494.67	10.00		11.00	11.00	2,493.67
Institute for the Study of Analgesic and Sedative Drugs	640.74	3,987.50	1,820.68	1,599.29	3,419.97	1,208.27
International Cellulose Products	577.00			423.84	423.84	153.16
Johnson & Johnson Co.	1,310.00					1,310.00
Lederle Laboratories	3,878.72	2,971.39	4,822.98	2,027.13	6,850.11	
Marcelle Fleischmann Foundation—Dr. Romansky	1,027.33	6,095.00	4,742.13	995.16	5,737.29	1,385.04
Mothers' Health Clinic	970.21	232.38		114.76	114.76	1,087.80
National Drug Co.	112.66			118.76	118.76	118.76
National Foundation for Infantile Paralysis		7,120.00	480.00	391.39	871.39	6,248.61
Nutrition Foundation	1,018.11		400.00	137.31	537.31	480.80
Pfizer, Charles, and Co.	2,540.20	5,855.54	7,429.12	966.68	8,395.80	

CURRENT FUNDS RESTRICTED (Continued)

For the Year Ended August 31, 1950

INCOME OF ENDOWMENT AND PLANT FUNDS

Funds	Balance August 31, 1949	Net Income for Year	Disposition			Balance August 31, 1950
			Current Operations	Added to Principal	Other	
ENDOWMENT FUNDS (Schedule 12)						
UNRESTRICTED						
Acker		12.39	12.39			
Alumni		24.00	24.00			
Campaign		7,713.11	7,713.11			
Carroll		9,093.46	9,093.46			
Cavan		1,716.94	1,716.94			
Davis		1,387.79	1,387.79			
Goddard		41.30	41.30			
Hazlett		793.64	793.64			
Kins		619.53	619.53			
Reschelderfer		87.15	87.15			
Sanders		517.33	517.33			
Subscription Gifts		61.95	61.95			
Sym		579.06	579.06			
Teller		62.94	62.94			
Trustees		711.38	711.38			
Weddell		26.85	26.85			
Willard Association		1,110.67	1,110.67			
Withers		2,065.10	2,065.10			
Woodhull			26,624.61			
				1,500.00		
	1,500.00	3,110.93	1,200.00			1,910.93
	271.68	7,853.87	7,128.00			997.55
SCHEDULE 1						
RESTRICTED						
Fellowship						
King						
Sanders						
Professorship						
Alumni						
Carroll	265.34	34.27	34.27			285.99
Depeu		20.65				
Congressional		6,555.00	6,555.00			
Elroy		6,752.93	6,752.93		932.93	
F		597.22	597.22			
Brasserie		6,132.75	6,132.75		6,197.75	
Yule	3,699.24	206.51				135.00
Government		40,235.65	40,235.65			3,905.75

Medical	134.43			469.26
Borden	116.80			6,860.30
Collins	413.02			
Cooper	185.30			
Gardner	1,334.00			
Lewis	337.85			
School of Medicine	295.44			
Pharmacy	413.02			
Gibbs				
Miscellaneous	206.51			
D.C.—D.A.R. Fund	535.28			
Transferred to D.C.—D.A.R. Loan Fund (Schedule 11)				
Graduate	4,815.29			
SCHEDULE I	69,668.32			
Hospital	1.03			
Barton	50.63			
Chapman	49.56			
General	103.25			
Hesser	126.87			
Kimmel	48.77			
Kulibank	20.65			
National Park Seminary	20.65			
Reinhardt	413.02			
Tres	413.02			
Woodbury	1,198.68			
SCHEDULE I	1,198.68			
Library	206.51			
Howard	41.30			
Meyer	413.02			
Noyes	82.60			
Swisher Alcove				
EXHIBIT G	211.05			
				959.84
				120.30
				1,231.70
				661.85

CURRENT FUNDS RESTRICTED (Continued)
For the Year Ended August 31, 1950
INCOME OF ENDOWMENT AND PLANT FUNDS (Continued)

Funds	Balance August 31, 1949	Net Income for Year	Disposition			Balance August 31, 1950
			Current Operations	Added to Principal	Other	
ENDOWMENT FUNDS (Continued)						
RESTRICTED (Continued)						
Scholarships						
Andrews	17.96	167.44	150.00			35.40
Barnack	2,147.91	827.40				2,975.31
Carr	5,851.00	2,007.65	1,650.00			6,208.65
Carter, H. H.	1,248.09	206.51				1,454.60
Carter, M. M.	1,259.62	41.30	30.00			1,270.92
Columbian Women Funds						
Brown	47.45	49.56	47.45			49.56
Chamberlin	90.94	95.00	90.94			95.00
College Women's	19.77	20.65	19.77			20.65
Founders of Columbian Women	197.69	206.51	197.69			206.51
Herron	197.69	206.51	197.69			206.51
Knap	197.69	206.51	184.46			213.74
Wilson	39.54	41.30				80.84
Davis	41.30	41.30	30.00			52.30
Dorsey	174.80	162.24	130.00			186.10
Earnham	138.23		30.00			174.82
Harvey	169.62	20.65	30.00			180.27
Harvey	17.28	118.74				37.93
Hazleton	47.30	203.61	150.00			16.94
Kendall	51.63	246.15				203.61
Morhouse	814.44	61.95				297.78
Pearson	482.96	117.29	85.00			496.29
Finwell	9,808.35	2,065.10				513.25
Shepard	920.00	413.02				1,133.02
Spencer	339.49	129.00	200.00			268.49
Stoner	430.64	82.60				513.24
Stoner	2,177.08	344.03				2,521.11
Walker	2,724.06	103.25				2,827.31
Withington	260.37	80.67	60.00			281.04
Woodhull	197.93	24.78	20.00			114.76
			3,273.00			
SCHOLARSHIPS AWARDED						

Prize	105.61	41.30	90.00	146.95
Burns.....	156.78	123.90	30.00	190.68
Cowles.....	69.58	41.30	30.00	80.88
Coastant.....	79.14	41.30	30.00	90.44
Cutter.....	211.90	28.91	30.00	210.81
Davis.....	46.21	123.90	100.00	70.11
Evary.....	82.79	49.56	35.00	97.35
Fryer.....	282.29	41.30	40.00	283.59
Fitch.....	522.21	227.95	160.00	590.16
Gouldard.....	134.00	41.30	30.00	145.30
Heward.....	60.99	33.04	20.00	74.03
Larner.....	596.97	206.51	210.00	593.48
Orltonaux.....	84.80	20.65	15.00	90.45
Ruggles.....	114.80	20.65	10.00	125.45
Saughton Elton.....	44.44	12.39	13.80	43.03
Sierrett.....	259.62	41.30	30.00	270.92
Swisher.....	324.49	41.30	30.00	365.79
Wish.....	610.55	206.51	843.80	817.06
Weddell.....				
Prizes Awarded.....	114,144.01			
Endowment Net Income.....				
PLANT FUNDS (Schedule 13)				
Field House.....	5.56	5.56	5.56	
George Washington Memorial.....	122.70	122.70	122.70	
Law School Expansion.....	238.72	238.72	238.72	
Paid (income used for athletics).....	2,949.89	2,949.89	2,949.89	
School of Engineering Building.....	3,096.80	3,096.80	3,096.80	
School of Medicine Building.....	52.93	52.93	52.93	
Women's Activities Building.....	152.29	152.29	152.29	
SCHEDULE 1				
TOTALS EXHIBIT C.....	50,181.39	120,712.90	104,769.35	53,350.55
			12,639.39	135.00

CURRENT FUNDS RESTRICTED (Continued)

For the Year Ended August 31, 1950

MISCELLANEOUS FUNDS

Funds	Balance August 31, 1949	Gifts	Disbursements	Balance August 31, 1950
SCHOLARSHIP FELLOWSHIP				
American Foundation Pharm. Education		200.00	Scholarships	200.00
Dorsey, Charles W.	848.00	336.00	To Schedule 12	184.00
" "		600.00	" "	1,000.00
Freeman and Watts, Drs.	466.67			600.00
Kellogg Medical Technology	1,350.00			466.67
Kinsey, R. D.		200.00	Refunded to donor	1,350.00
Northern Baptist	137.60		Scholarships	200.00
Pitt's Foundation	428.00			
President's Fund		950.00	Refunded to donor	950.00
Soroptimist Club	786.00		Scholarships	750.00
Zonta Club	180.00			
PRIZE				
Alpha Delta Pi Sorority		10.00	Prize	10.00
Chi Omega Sorority		25.00	"	25.00
D. C. Daughters of the American Revolution		15.00	"	15.00
Delta Gamma Sorority	50.00		"	25.00
Delta Zeta Sorority		10.00	"	10.00
Ellsworth		25.00	"	25.00
Kappa Kappa Gamma Sorority		10.00	"	10.00
Pi Beta Phi Sorority		20.00	"	20.00
Sigma Kappa Sorority		10.00	"	10.00
Student Art Show		45.00	"	45.00
United Daughters of the Confederacy		25.00	To Schedule 13	25.00

CURRENT FUNDS RESTRICTED (Continued)
For the Year Ended August 31, 1950
AGENCY FUNDS

Funds	Balance August 31, 1949	Receipts	Disbursements	Balance August 31, 1950
Colonial Review	191.00	262.00	Withdrawals.....	453.00
Courier	365.96	5,826.72	"	5,409.90
Engineers' Club Room	199.93			199.93
Flower Fund	132.00	10.55	Withdrawals.....	107.00
Gift Shop	2,764.74	20,906.58	Withdrawals.....	6,970.53
Swisher History Club	120.75			120.75
Women's Board Lecture Series	702.40	453.10	Withdrawals.....	970.00
Women's Board Hospital Benefit	9,572.95		"	9,572.95
Yamulky, Perihan	136.50	3,000.00	"	1,535.50
TOTALS—EXHIBIT C	14,186.23	30,458.95	.....	10,686.49

CHANGES IN PRINCIPAL OF LOAN FUNDS

For the Year Ended August 31, 1950

Funds	Balance August 31, 1949	Additions			Refunded to U. S. Government	Balance August 31, 1950
		Income of D.C.—D.A.R. Endowment Fund	Gifts	Interest on Loans		
D.C.—D.A.R. Loan Fund.....	2,865.41	206.51		16.37		3,071.92
George Washington Law Association Loan Fund.....	769.73		488.00			786.10
Harris Loan Fund.....	352.35		30.00			400.00
Home Economics Loan Fund.....	16,345.20			186.59		382.35
Kellogg Medical School Loan Fund.....	1,200.00					16,531.79
Sutherland Medical School Loan Fund.....	8,125.01			40.71		1,200.00
University Loan Fund.....	7,860.30				1,109.18	8,165.72
War Loan Fund.....		206.51	430.00	243.67		6,751.12
Totals—Exhibit D.....	37,518.00				1,109.18	37,289.00

SCHEDULE 11

RESTRICTED

FELLOWSHIP					
King	71,821.42		1,500.00		75,321.42
Sanders	213,030.15				206,602.87
Loss on sale of investments				6,427.28	

PROFESSORSHIP

Alumni	829.67				829.67
Carrill	500.00				500.00
Congressional	158,709.04		932.93		158,709.04
Depew	167,859.31				167,859.31
Elton	14,508.19				14,508.19
Fry (controlled by the University)	24,471.71		6,197.75		30,669.46
Fry (controlled by National Savings and Trust Co.)	102,561.59				102,992.49
Gain on sale of investments	5,000.00			430.90	5,000.00
Yulee					

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS (Continued)

For the Year Ended August 31, 1950

Funds	Balance August 31, 1949	Additions			Deductions	Balance August 31, 1950
		Gifts	Investment Income	Other		
RESTRICTED (Continued)						
School						
Government	1,000,000.00					1,000,000.00
Scottish Rite						
Medicine	3,254.37		134.43			3,388.80
Borden	2,828.00					2,828.00
Coffin	10,000.00					10,000.00
Crozier	9,268.04	2,025.00				
Freeman					11,293.04	
Transferred to Organized Research—Schedule 10	4,486.55					4,486.55
Gardner	32,298.60					32,298.60
Leota	8,081.00	410.00				8,491.00
School of Medicine Fund	8,334.13					8,334.13
Sharpe						
Pharmacy	10,000.00					10,000.00
Gibbs						

MISCELLANEOUS	5,000.00				5,000.00
D.C.—D.A.R.	12,724.57	542.00			13,266.57
Graduate					
HOSPITAL					
Burton	1,225.90	1,000.00			1,000.00
Chapman	1,200.00				1,225.90
General	2,500.00				1,200.00
Houser	3,071.70				2,500.00
Kimmel	1,800.70		48.77		3,071.70
Kuhlbank	1,500.00				1,224.47
National Park Seminary	500.00				500.00
Reinhardt	10,000.00				10,000.00
Tree	10,000.00				10,000.00
Woodbury					
LIBRARY					
Howard	5,000.00				5,000.00
Meyer	1,000.00				1,000.00
Noyes	10,000.00				10,000.00
Swisher	2,000.00				2,000.00

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS (Continued)
For the Year Ended August 31, 1950

Funds	Balance August 31, 1949	Additions			Deductions	Balance August 31, 1950
		Gifts	Investment Income	Other		
RESTRICTED (Continued)						
SCHOLARSHIP						
Andrews.....	5,149.41				9.43	5,139.98
Loss on sale of investments.....	20,033.06					20,033.06
Bartsch.....	48,608.91					48,608.91
Carr.....	5,000.00					5,000.00
Carter, H. H.....	1,000.00					1,000.00
Carter, M. M.....						
Columbian Women Scholarship Funds						
Brown.....	1,200.00					1,200.00
Chamberlin.....	2,300.00					2,300.00
College Women's.....	5,000.00					5,000.00
Founders of Columbian Women						
Herron.....	5,000.00					5,000.00
Knapp.....	1,000.00					1,000.00
Wilson.....	1,000.00					1,000.00
Davis.....	1,000.00					1,000.00
Dorsey.....	3,000.00	1,000.00				5,000.00
Transferred from Schedule 10-Page 5.....	1,000.00			1,000.00		1,000.00
Farnham.....	500.00					500.00
Hampel.....	5,031.97					5,031.97
Harvey.....						
Hazeltin.....	5,959.61					5,959.61
Kendall.....	1,500.00					1,500.00
Marchoise.....	2,839.80					2,839.80
Pearson.....	50,000.00					50,000.00
Powell.....	10,000.00					10,000.00
Shepard.....	7,434.20					7,434.20
Spencer.....	2,000.00					2,000.00
Stone.....	7,522.55					7,522.55
Swisher.....	2,500.00					2,500.00
Whitaker.....	1,953.00					1,953.00
Whitson.....	600.00					600.00
Woodhull.....						

Paize.....	1,000.00					1,000.00
Burns.....	3,000.00					3,000.00
Cowles.....	1,000.00					1,000.00
Croissant.....	1,000.00					1,000.00
Cutter.....	1,000.00					1,000.00
Davis.....	700.00					700.00
Esary.....	3,000.00					3,000.00
Evans.....	1,200.00					1,200.00
Fitch.....	1,000.00					1,000.00
Goddard.....	5,519.00					5,519.00
Hubbard.....	1,000.00					1,000.00
Larner.....	800.00					800.00
Ordronaux.....	5,000.00					5,000.00
Ruggles.....	500.00					500.00
Staughton-Elton.....	500.00					500.00
Sterrett.....	300.00					300.00
Swisher.....	1,000.00					1,000.00
Walsh.....	1,000.00					1,000.00
Weddell.....	5,000.00					5,000.00
	2,779,731.89	16,877.00	8,813.88	1,430.90	17,729.75	2,789,123.92
RESERVES FOR PROTECTION OF INVESTMENTS						
Consolidated Endowment Funds.....	57,251.35		6,622.69	4,133.41		68,007.45
Gain on sale of investments.....	59,561.38			348.00		59,909.38
Scottish Rite.....						
Gain on sale of investments.....						
TOTALS—EXHIBIT E.....	2,896,544.62	16,877.00	15,436.57	5,912.31	17,729.75	2,917,040.75

CHANGES IN PRINCIPAL OF PLANT FUNDS
For the Year Ended August 31, 1950

Funds	Balance August 31, 1949	Additions			Deductions	Balance August 31, 1950
		Gifts	Investment Income	Other		
PLANT ADDITIONS						
Field House	185.40		5.56			190.96
George Washington Memorial	5,153.07		122.70		1,933.11	3,130.75
Auditorium equipment purchased					211.91	
Transferred to Surplus—Exhibit B						
Hospital Equipment		18,213.23			18,213.23	
Equipment purchased	7,957.13		238.72			8,195.85
Law School Expansion						
Library Book Funds	30.40				10.32	20.08
Brick, Mabel C	50.00				50.00	
Books purchased						58.75
Butler, Henry F	58.75					
Books purchased	429.91				82.12	347.79
Class of 1945	25.00					25.00
Council of Religious Organizations		1,000.00				1,000.00
Books purchased						45.00
Davis, Harry C	45.00					45.00
Ellison, Newell W	225.00					225.00
Engineers'	100.00					100.00
Hebrew Society	160.00					160.00
Herbst, Louise C	7.02					7.02
Hospital						
Lincoln Arc Welding	9.80					9.80
Murdock, Mrs. James O						

Noyes, Theodore.	4,706.76				150.19	4,556.57
Books purchased.	58.23					58.23
Rosen, Dr. John N.	2.00					27.00
United Daughters of the Confederacy.					25.00	
Transferred from Schedule 10—Page 5						
Ohio Section of the G. W. Memorial Association.	1,663.39				1,663.39	
Auditorium equipment purchased.						
Pairo.	130,626.63					130,626.63
School of Engineering Building.	80,784.58	47,333.10	3,046.80			131,164.48
School of Medicine Building.	1,764.09		52.93			1,817.02
Women's Activities Building.	5,076.17		152.29			5,228.46
Women's Board Gift Shop Equipment.		6,610.07			6,530.90	79.17
To reduce Deferred Charge—Hospital Equipment (page 9)						
	239,118.33	73,156.40	3,619.00	25.00	28,845.17	287,073.56
RESERVE FOR PROTECTION OF INVESTMENTS.	1,143.29		2,203.47			
Investment income in excess of 3%.				2,721.32		6,068.08
Gain on sale of investments.						
TOTALS—EXHIBIT F....	240,261.62	73,156.40	5,822.47	2,746.32	28,845.17	293,141.64

For the Year Ended August 31, 1950

RESTRICTED—GENERAL—SCHEDULE 1

150.00
150.00
100.00
90.00

RESTRICTED—HOSPITAL—SCHEDULE 1

RESTRICTED—SCHEDULE 10—PAGE 2

200.00
336.00
600.00
200.00
950.00

Chi Omega Sorority American Revolution

10.00
25.00
10.00
20.00
10.00
45.00
25.00

School of Medicine—Dermatology and Syphilology
Merkle Foundation.....

100.00	
100.00	
75.00	
25.00	

33,881.00 585,347.10

LOAN FUNDS (Schedule 11)

Harris Loan Fund—George W. Harris	400.00	430.00
Home Economics Loan Fund—D. C. Home Economics Association	30.00	

ENDOWMENT FUNDS (Schedule 12)

UNRESTRICTED		
Alumni Endowment Fund—Julia M. Escher	100.00	
Weddell Endowment Fund—Virginia Chase Weddell	5,000.00	
Willard Association Endowment Fund—Willard Association	1,000.00	6,100.00
RESTRICTED		
School of Medicine		
Freeman Memorial Fund—Dr. Walter Freeman	2,000.00	
George A. Rogers	25.00	2,025.00
School of Medicine Fund—		
Dr. L. H. Andrus	200.00	
Dr. Mary Cruise	200.00	
Dr. James F. Dowd	10.00	410.00
Miscellaneous		
Graduate Endowment Fund—		
Ruth E. Davis	100.00	
Harry S. Berlesky	100.00	
E. O. Seaguit	100.00	
F. C. Seaguit	70.00	
Martha E. Van Alstine	70.00	
Dr. William S. Miller	20.00	
Dr. Samuel Topperman	20.00	
Elizabeth Larrick	11.00	
Florence Jansson	11.00	
Arthur C. Adams	10.00	
Courtland H. Davis	10.00	
Samuel Greenberg	10.00	
Ellis B. Miller	10.00	
Hospital		
Burton Fund—Grace C. Burton	542.00	
Scholarship	1,000.00	
Dorsey Scholarship Fund—Harryman Dorsey	1,000.00	
Hazelton Scholarship Fund—Julie S. Hazelton	10,777.00	16,877.00
Swisher Scholarship Fund—Estate of Dr. Charles Clinton Swisher	6,800.00	

GIFTS AND GRANTS (Continued)

For the Year Ended August 31, 1950

PLANT FUNDS (Schedule 13)

Hospital Equipment Funds—various donors	18,213.23	
Library Book Funds—Newell W. Ellison	1,000.00	
School of Engineering Building Fund—Charles H. and Lida R. Tompkins	47,333.10	
Women's Board Gift Shop Equipment Fund—Women's Board of the George Washington University Hospital	<u>6,610.07</u>	<u>73,156.40</u>
TOTAL GIFTS AND GRANTS		<u><u>675,810.50</u></u>

DESCRIPTION OF LOAN FUNDS

August 31, 1950

DISTRICT OF COLUMBIA D. A. R. LOAN FUND	
Created in 1938 from income of the D. C.—D. A. R. Endowment Fund. To be loaned to descendants of patriots of the American Revolution.....	3,071.92
GEORGE WASHINGTON LAW ASSOCIATION LOAN FUND	
Created in 1941 by the George Washington Law Association to be loaned to students of the Law School.....	786.10
HARRIS LOAN FUND	
Created in 1950 by gift of George W. Harris to be loaned to an orthoptic technician student.....	400.00
HOME ECONOMICS LOAN FUND	
Created in 1940 by the D. C. Home Economics Association to be loaned to senior girls majoring in home economics.....	382.35
KELLOGG LOAN FUND	
Created in 1942 by the W. K. Kellogg Foundation to be loaned to students of the School of Medicine.....	16,531.79
SUTHERLAND LOAN FUND	
Created in 1941 by Rose L. Sutherland and other donors, to be loaned to students of the School of Medicine.....	1,200.00
UNIVERSITY LOAN FUND	
Created in 1928 by the University to make short time loans for educational purposes.....	8,165.72
WAR LOAN FUND	
Created in 1942 by the United States Government to be loaned to students in technical and professional fields of national defense.....	6,751.12

DESCRIPTION OF ENDOWMENT FUNDS

August 31, 1950

UNRESTRICTED FUNDS

ACKER FUND Bequest of George N. Acker, M. D., received in 1924, the income only to be used....	300.00
ALUMNI ENDOWMENT FUND Created by the Class of 1920, to be added to by succeeding graduating classes, the income only to be used....	681.20
CAMPAIGN FUND Created in 1923-24 by various donors, the income only to be used....	186,749.38
CORCORAN FUND Gift of William W. Corcoran of \$112,000, and gifts of other donors between the years 1871-86, the income only to be used....	220,155.76
DAVIS FUND Bequest of Harry C. Davis, received in 1946, the income only to be used....	41,570.40
GODDARD ENDOWMENT FUND Bequest of Frederick J. Goddard, received in 1949, the income only to be used....	33,601.15
HAGGETT FUND Created in 1941 by Isabelle Barnes Haggett, the income only to be used.....	1,000.00
KING, W. B., FUND Created in 1941 by William B. King, the income only to be used....	19,215.50

REICHELDERFER FUND Created by Mary M. Reichelderfer in 1945, in memory of her husband, Luther H. Reichelderfer, the income only to be used.....	15,000.00
SANDERS ENDOWMENT FUND Created by J. Sanders in 1945, the income only to be used.....	2,110.00
SUBSCRIPTION GIFTS FUND Created by various donors during the years 1845-51, the income only to be used. (Formerly called the Poindexter Endowment Fund).....	12,525.56
SYMS FUND Bequest of Samuel Syms in 1891, the income only to be used.....	1,500.00
TELLER FUND Bequest of John D. Teller and Mary L. Teller, received in 1949, the income only to be used.....	11,104.14
TRUSTEES FUND Created by the Board of Trustees of the University in 1932, the income only to be used.....	1,524.06
WEDDELL FUND Created in 1948 by bequests of Alexander W. Weddell and Virginia Chase Weddell, the income only to be used.....	10,000.00
WILLARD ASSOCIATION FUND Gift of the Willard Association in 1950, the income only to be used.....	1,000.00
WITHERS FUND Gift of John Withers of \$16,000, and gifts of various donors during the years 1851-70, the income only to be used. (Formerly called the Forty Thousand Dollar Endowment Fund).....	26,891.46
WOODHULL FUND Bequest of Margaret Willett Woodhull, received in 1946, the income only to be used.....	50,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1950

FELLOWSHIP FUNDS

KING FELLOWSHIP FUND Created in 1928 by bequest of Isabella Osborn King, the income to be used for a fellowship in biology.....	75,321.42
SANDERS FELLOWSHIP FUND Bequest of Addie Sanders in 1928 in memory of her brother, Thomas Bradford Sanders, the income to be used for fellowships in various academic fields of study.....	206,402.87

PROFESSORSHIP FUNDS

ALUMNI PROFESSORSHIP FUND Gifts of various alumni since 1911, the income to be used for an alumni professorship in mathematics.....	829.67
CARROLL PROFESSORSHIP FUND Created by Mary A. Sharpe in 1928, in memory of Mitchell Carroll, the income to be used for a chair in archeology.....	500.00
CONGRESSIONAL PROFESSORSHIP FUND Created in 1832 by gift of the United States of America, by Act of Congress, the income to be used for professorships.....	158,709.04
DEPEW COCKSE IN PUBLIC SPEAKING FUND Created by May Depew in 1936, the income to be used for a course to be known as the "Chauncey M. Depew Course in Public Speaking"; income in excess of \$6,000 annually to be added to principal.....	168,792.24
ELTON PROFESSORSHIP FUND Bequest of Ronca Elton of Exeter, England, in 1872, the income to be used for a professorship to be called the "Elton Professorship of Mental and Moral Philosophy".....	14,508.19
FRY PROFESSORSHIP FUNDS Bequest of Annabel Lee Fry, received in 1945, in memory of her husband, Dr. Henry D. Fry, the income to be used for a professorship in physiology.....	102,992.49
Created in 1945 from income of the original fund, the income of the two funds to be used for a professorship in physiology.....	30,669.46
YULEE ENDOWMENT FUND Bequest of Nannie Yulee Noble in memory of her mother, Nancy Yulee, in 1929, the income to be used for lectures in home economics.....	5,000.00

SCHOOL FUNDS

GOVERNMENT

SCOTTISH RITE ENDOWMENT FUND

Created in 1928 by the Supreme Council of the Ancient and Accepted Scottish Rite of Freemasonry of the Southern Jurisdiction of the United States of America, as a permanent memorial to George Washington, The Mason, the income to be used to maintain a School of Government 1,000,000.00

MEDICAL

BORDEN MEDICAL FUND

Created in 1932 by William Cline Borden, M. D., and Jennie Ella Borden, the income to be applied to lectureships to be known as the "William Cline Borden Lectures on Surgery or Medical Science." Any income not required annually shall be added to principal..... 3,388.80

COLLINS MEDICAL RESEARCH FUND

Created in 1946 by various donors in memory of Dr. James Lloyd Collins, the income to be used for special research in surgery..... 2,828.00

COOPER MEDICAL RESEARCH FUND

Bequest of Eleanor J. Cooper in 1905, on certain terms since modified by the Supreme Court of D. C. as follows: the income to be used toward the establishment and maintenance, in connection with the Medical Department of the University, of a Research Laboratory, the work of this laboratory to be devoted to the investigation of the nature, causation, prevention, and cure of malaria and other infectious and contagious diseases..... 10,000.00

GARDNER MEDICAL SCHOOL FUND

Bequest of William D. Gardner, received in 1928, the income to be used for the School of Medicine..... 4,486.55

LEWIS MEDICAL SCHOOL FUND

Bequest of Samuel E. Lewis, received in 1925, the income to be used for the School of Medicine..... 32,298.60

SCHOOL OF MEDICINE ENDOWMENT FUND

Created in 1940 by various donors, the income to be used for the School of Medicine..... 8,491.00

SHARPE MEDICAL SCHOOL FUND

Created by Mary A., Elizabeth M., and Sallie Sharpe in 1924, the income to be used for the School of Medicine..... 8,334.13

PHARMACY

GIBBS PHARMACY FUND

Created by M. G. Gibbs in 1927, the income to be used to aid in establishing and maintaining a commercial pharmacy course in connection with the School of Pharmacy..... 10,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1950

MISCELLANEOUS FUNDS

DISTRICT OF COLUMBIA D. A. R. ENDOWMENT FUND Created in 1926 by chapters in the District of Columbia, the income to be added to the D. C.—D.A.R. Loan Fund..	5,000.00
GRADUATE ENDOWMENT FUND Created by the Class of 1926, to be used for the acquisition of sites, erection of buildings, and maintenance and purchase of equipment. Only the income may be used until Fund reaches \$50,000 when income, and principal over \$50,000, may be used.....	13,266.57

HOSPITAL FUNDS

BURTON HOSPITAL FUND Created by Grace C. Burton in 1950, the income to be used for medicine for indigent persons	1,000.00
CHAPMAN HOSPITAL FUND Bequest of Mrs. Susanna A. Chapman in 1911, the income to be used for the purposes of the free wards of the University Hospital.....	1,225.90
GENERAL HOSPITAL ENDOWMENT FUND Created in 1929 by various donors, the income to be used for the benefit of the University Hospital.....	1,200.00
HOUSER HOSPITAL FUND Bequest of E. Keller Houser, received in 1944, the income to be used to endow a room in memory of his daughter, Anna Victoria Houser.....	2,500.00
KIMMEL HOSPITAL FUND Bequest of Annie Kimmel, received in 1932, the income to be used for the benefit of the University Hospital.....	3,071.70

KUHLBANK HOSPITAL FUND	
Bequest of Freda Kuhlbank, received in 1930, the income to be added to the principal until the principal shall be large enough to maintain a bed in the White Ward of the University Hospital to be known as the "Freda Kuhlbank Bed"	1,229.47
NATIONAL PARK SEMINARY HOSPITAL FUND	
Gift of students of National Park Seminary of Forest Glen, Maryland, in 1906, the income to be used toward the maintenance of a bed in the University Hospital	500.00
REINHARDT HOSPITAL FUND	
Bequest of Luisa Wynne Reinhardt in 1922, the income to be used for the University Hospital	500.00
TREE HOSPITAL FUND	
Created in 1911 by bequest of Lambert M. Tree, in memory of his mother, Mrs. Laura M. Tree, the income to be used to maintain one or more beds in the University Hospital, to be known as the "Laura M. Tree Bed or Beds"	10,000.00
WOODBURY HOSPITAL FUND	
Bequest of Ellen DeQ. Woodbury in 1909, the income to be used for the reception and treatment of female patients in the University Hospital	10,000.00
	— 89 —

LIBRARY FUNDS

HOWARD LIBRARY FUND	
Gift of Colonel Deane Childs Howard in 1943 in memory of Captain Deane Childs Howard, Jr., the income to be used to purchase books for the Library	5,000.00
MEYER LIBRARY FUND	
Gift of Eugene Meyer in 1944, the income to be used to purchase books for the Library	1,000.00
NOYES LIBRARY FUND	
Bequest of Theodore W. Noyes, received in 1947, the income to be used to purchase books for the Library	10,000.00
SWISHER ALCOVE BOOK FUND	
Gift of Dr. Charles Clinton Swisher in 1941, in trust for the Historical Society of the University, the income to be used to purchase books for the Swisher Alcove in the Library	2,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1950

SCHOLARSHIP FUNDS

ANDREWS MEMORIAL SCHOLARSHIP FUND Gift of Belle Lusk Andrews in 1920 in memory of her husband, Byron Andrews, the income to be used for scholarships for ambitious and needy students of English, Latin, journalism, history, literature, or political science.	5,139.98
BARTSCH SCHOLARSHIP FUND Created by Dr. Anna Bartsch-Dunne in 1946, the income to be used for a scholarship for a woman in the School of Medicine and an internship for a woman in the University Hospital.	20,033.06
CARR SCHOLARSHIP FUND Created by bequest of Emma K. Carr in 1932, the income to be used for scholarships for young white men	48,608.91
CARTER, H. H., SCHOLARSHIP FUND Gift of Maria M. Carter in 1896, in memory of her husband, Henry Harding Carter, the income to be used for scholar- ships in civil engineering	5,000.00
CARTER, M. M., SCHOLARSHIP FUND Gift of Maria M. Carter in 1871, the income to be used for scholarships for young men.	1,000.00

COLUMBIAN WOMEN SCHOLARSHIP FUNDS

BROWN SCHOLARSHIP FUND Created by the College Women's Club of Washington, D. C., in 1925, in memory of Elizabeth V. Brown, the income to be used for scholarships in the School of Education.....	1,200.00
CHAMBERLIN SCHOLARSHIP FUND Created by the Columbian Women of The George Washington University in 1932 in memory of Grace Ross Chamberlin, the income to be used for scholarships for young women.....	2,300.00
COLLEGE WOMEN'S SCHOLARSHIP FUND Gift of the College Women's Club of Washington, D. C., in 1926, the income to be used for scholarships.....	500.00
FOUNDERS OF COLUMBIAN WOMEN SCHOLARSHIP FUND Created by the Columbian Women of The George Washington University in 1920, the income to be used for scholarships for women in Columbian College.....	5,000.00
HERRON SCHOLARSHIP FUND Created by the Columbian Women of The George Washington University in 1925 in memory of Lillian Young Herron, the income to be used for scholarships for women in Columbian College. (Formerly Third Columbian Women Scholarship Fund).....	5,000.00
KNAPP SCHOLARSHIP FUND Gift of the Columbian Women of The George Washington University in 1915, in memory of Nellie Maynard Knapp, the income to be used for scholarships for women.....	5,000.00
WILSON SCHOLARSHIP FUND Gift of Elizabeth Wilson in 1926 in memory of her parents, Lewes D. and Myrtice H. Wilson, the income to be used for scholarships in the School of Medicine.....	1,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)
August 31, 1950

SCHOLARSHIP FUNDS (Continued)

DAVIS SCHOLARSHIP FUND Gift of Isaac Davis in 1869, the income to be used for scholarships.	1,000.00
DORSEY SCHOLARSHIP FUND Created in 1947 by Harryman Dorsey in memory of Charles Worthington Dorsey, the income to be used for scholarships	5,000.00
FARNHAM SCHOLARSHIP FUND Gift of Mrs. Robert Farnham in 1871, the income to be used for scholarships in Columbian College	1,000.00
HAMPEL SCHOLARSHIP FUND Gift of Evelyn Hampel Young in 1948 in memory of her mother, Anna Spickel Hampel, the income to be used for Scholarships for married women in the School of Education or Columbian College	500.00
HARVEY SCHOLARSHIP FUND Bequest of Emma Elizabeth Harvey, received in 1923, in memory of her daughter, Elma Lewis Harvey, the income to be used for scholarships in Columbian College for young women of the Protestant faith and of the Caucasian race.	5,031.97
HAZELTON SCHOLARSHIP FUND Bequest of Lillie S. Hazleton, received in 1950, the income to be used for scholarships	5,000.00
KENDALL SCHOLARSHIP FUND Gift of Annes Kendall in 1869, the income to be used for a scholarship now designated by the Board of Trustees as one of the two High School Scholarships assigned to Central High School	5,959.61
MOREHOUSE SCHOLARSHIP FUND Created by A. Morehouse in 1861, the income to be used for scholarships for undergraduates intending to enter the Christian ministry	1,500.00
PEARSON SCHOLARSHIP FUND Bequest of Paul Pearson, received in 1944, the income to be used for scholarships in the School of Pharmacy	2,839.80

POWELL SCHOLARSHIP FUND Gift of Levin M. Powell in 1886, the income to be used to train young men for entrance in the United States Naval Academy or to fit them to become mates and masters in the Merchant Marine Service of the United States.....	50,000.00
SHEPARD SCHOLARSHIP FUND Bequest of Lula M. Shepard, received in 1946, the income to be used for scholarships in the School of Government...	10,000.00
SPENCER SCHOLARSHIP FUND Created by Louisa J. Spencer in 1918, the income to be used for scholarships.....	7,434.20
STONE SCHOLARSHIP FUND An anonymous gift in 1893 in memory of Mary Lowell Stone, the income to be used for scholarships for women students of science in Columbian College.....	2,000.00
SWISHER SCHOLARSHIP FUND Created by Dr. Charles Clinton Swisher in 1941, the income to be used to award scholarships in Medieval History...	8,329.55
WALKER SCHOLARSHIP FUND Gift of William Walker in 1824, the income to be used for scholarships for undergraduates intending to enter the Christian ministry.....	2,500.00
WITHINGTON SCHOLARSHIP FUND Gift of the New York Baptist Theological Seminary in 1830, on behalf of John Withington, the income to be used for scholarships.....	1,953.13
WOODHULL SCHOLARSHIP FUND Bequest of Ellen M. E. Woodhull, received in 1921, the income to be used for scholarships in Columbian College..	600.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1950

PRIZE FUNDS

BURNS MEMORIAL AWARD FUND Gift of Persia Burns in 1937 in memory of her son, Byrne Thurtell Burns, the income to be used for an annual award in chemistry.....	1,000.00
COWLES PRIZE FUND Created in 1943 by John Henry Cowles, the income to be used for annual awards in the School of Government.....	3,000.00
CROISSANT PRIZE AWARD Bequest of DeWitt Clinton Croissant, received in 1941, the income to be used to award an annual prize for excellence in dramatics or dramatic studies.....	1,000.00
CUTTER PRIZE FUND Gift of Marion Kendall Cutter in 1902, in memory of E. K. Cutter, the income to be used for an annual award for excellence in the study of English.....	1,000.00
DAVIS PRIZE FUND Gift of Isaac Davis in 1847, the income to be used for annual awards to members of the senior class who have made the greatest progress in elocution since their connection with the University.....	700.00
ESSARY PRIZE FUND Gift of Helen Essary Murphy in 1948 in memory of her late husband, Jesse Frederick Essary, the income to be used for an annual award in journalism.....	3,000.00
EVANS MEMORIAL AWARD FUND Created in 1937 by friends of Joshua Evans III, the income to be used to establish a prize, as a memorial to an "out-standing life," to be awarded annually "to that man in the graduating class who has demonstrated his signal ability in the social and political sciences and who has given promise of the interpretation of that ability in good citizenship among his fellows".....	1,200.00
FITCH PRIZE FUND Gift of James E. Fitch in 1883 in memory of Willie E. Fitch, the income to be used for an annual award to a senior student for the best general examination in chemistry.....	1,000.00
GODDARD PRIZE FUND Gifts of Mary W. Goddard, Alice Douglas Goddard, and Frederick J. Goddard, in 1923, in memory of Morgan Richardson Goddard, Edward Carrington Goddard, and James Douglas Goddard; added to in 1941 by a gift of Frederick J. Goddard in memory of Alice Douglas Goddard. The income shall be used to award four cash prizes annually to the students making the highest averages in commerce, French language and literature, pharmacy, and American literature, respectively.....	5,519.00

HUBBARD PRIZE FUND	
Gift of Gertrude M. Hubbard in 1907, in memory of her husband, Gardiner G. Hubbard, the income to be used for an annual award for excellence in American history.....	1,000.00
LARNER PRIZE FUND	
Bequest of John B. Larner in 1933, the income to be used for an annual award in the Law School.....	800.00
ORDRONAUX PRIZE FUND	
Bequest of John Ordronaux in 1909, the income to be used for annual awards in the Law and Medical schools.....	5,000.00
RUGGLES PRIZE FUND	
Gift of William Ruggles in 1859, the income to be used for an annual award for excellence in mathematics.....	500.00
STRAUGHTON-ELTON PRIZE FUND	
Created by gift of Romco Elton of Exeter, England, in 1860, the income to be used for annual awards for excellence in the Latin and Greek languages, one to be called the Staughton Prize in Latin, the other the Elton Prize in Greek...	500.00
STERRETT PRIZE FUND	
Gift of the Reverend J. MacBride Sterrett, in 1911, in memory of his son, J. MacBride Sterrett, Jr., the income to be used for books to be awarded annually to the student obtaining the highest average in general physics.....	300.00
SWISHER PRIZE FUND	
Gift of Charles Clinton Swisher in 1941, the income to be applied yearly to enlarging the sum set apart for the Historical Prize established in his name by the Historical Club, December 7, 1936.....	1,000.00
WALSH PRIZE FUND	
Gift of Thomas F. Walsh in 1901, the income to be used for an annual award for the best essay on some topic in Irish history.....	1,000.00
WEDDELL PRIZE FUND	
Gift of Virginia Chase Weddell in 1923, the income to be used to award annually the Alexander Wilbourne Weddell Prize to the student submitting the best essay upon the general subject of the promotion of peace among the nations of the world.....	5,000.00

RESERVES FOR PROTECTION OF INVESTMENTS OF ENDOWMENT FUNDS

RESERVE FOR PROTECTION OF CONSOLIDATED ENDOWMENT FUNDS INVESTMENTS	
Created from gains arising from the sale of investments, and by setting aside annually a portion of the net income of Consolidated Endowment Funds Investments.....	68,007.45
RESERVE FOR PROTECTION OF SCOTTISH RITE ENDOWMENT FUND INVESTMENTS	
Created from gains arising from the sale of Scottish Rite Investments.....	59,909.38

DESCRIPTION OF PLANT FUNDS

August 31, 1950

PLANT ADDITIONS

FIELD HOUSE FUND	190.96
Created by the Class of 1946 to assist in building a field house.....	
GEORGE WASHINGTON MEMORIAL FUND	3,130.75
Created in 1937 by transfer of the assets of the George Washington Memorial Association to the University, to be used toward the erection and equipping of the auditorium.....	
LAW SCHOOL EXPANSION FUND	8,195.85
Created in 1945 by various donors, to be used for the acquisition of land and the erection of a building or buildings for the use of the Law School.....	
LIBRARY BOOK FUNDS—GIFTS OF VARIOUS DONORS	
BROCK, MABEL C., LIBRARY FUND.....	20.08
CLASS OF 1945 LIBRARY FUND.....	58.75
COUNCIL OF RELIGIOUS ORGANIZATIONS LIBRARY FUND.....	347.79
DAVIS, HARRY C., LIBRARY FUND.....	25.00
ELLISON, NEWELL W., LIBRARY FUND.....	1,000.00
ENGINEERS' LIBRARY FUND.....	45.00
HELLENIC SOCIETY LIBRARY FUND.....	225.00
HERBST LIBRARY FUND.....	100.00
HOSPITAL LIBRARY FUND.....	160.00
HOSPITAL ARC WELDING FOUNDATION LIBRARY FUND.....	7.02
LINCOLN, MRS. JAMES O., LIBRARY FUND.....	9.80
MURDOCK, THEODORE W., LIBRARY FUND.....	4,556.57
NOYES, THEODORE W., LIBRARY FUND.....	58.23
ROSEN LIBRARY FUND.....	27.00
UNITED DAUGHTERS OF THE CONFEDERACY LIBRARY FUND.....	

PAIRO FUND	
Created in 1931 by Richard E. Pairo, by devise and bequest, to be used for athletics	130,626.63
SCHOOL OF ENGINEERING BUILDING FUND	
Created in 1946 by Mr. and Mrs. Charles H. Tompkins, to be used toward the erection of a School of Engineering Building	131,164.48
SCHOOL OF MEDICINE BUILDING FUND	
Created in 1945 by various donors, to be used toward the erection of a School of Medicine building	1,817.02
WOMEN'S ACTIVITIES BUILDING FUND	
Created in 1939 by various donors to erect a women's activities building	5,228.46
WOMEN'S BOARD GIFT SHOP EQUIPMENT FUND	
Gift of the Women's Board of The George Washington University to purchase equipment for the Gift Shop	79.17

RESERVE FOR PROTECTION OF INVESTMENTS OF CONSOLIDATED PLANT FUNDS

Created from the income of Consolidated Plant Funds Investments, and gains arising from the sale of Consolidated Plant Funds Investments	6,068.08
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SUMMARIES OF
DOCTORAL DISSERTATIONS

1949 and 1950

THE
GEORGE
WASHINGTON
UNIVERSITY
BULLETIN

SUMMARIES OF
DOCTORAL DISSERTATIONS

1949 and 1950

WASHINGTON, D. C.

PUBLISHED IN MCMLI

BY THE UNIVERSITY

THE
HISTORY
OF THE
CITY OF
BOSTON
FROM
1630 TO 1800

BY
JOHN H. COLEMAN

NEW YORK
PUBLISHED BY
THE UNIVERSITY

PREFATORY NOTE

This number of the University BULLETIN contains summaries of the dissertations which have been accepted during 1949 and 1950, inclusive, in partial satisfaction of the requirements for the degrees of Doctor of Philosophy, Doctor of Juridical Science, and Doctor of Education at The George Washington University. The original dissertations are filed in the University Library, where they may be consulted by students interested in examining the complete texts.

AVAILABILITY OF DISSERTATIONS

Dissertations listed in this and earlier issues may be ordered copied at cost by the non-profit Bibliofilm Service, care U. S. Department of Agriculture Library, Washington 25, D. C., in bibliofilm or photoprint form.

CONTENTS

DOCTOR OF PHILOSOPHY

	Page
JOSEPH DANIEL COKER Economics of Strategic Target Selection (February 22, 1949) . . .	3
MARY BARBARA MILLS A Study of Some Chemical Interrelationships of Ascorbic Acid, Dehydroascorbic Acid, and Diketogulonic Acid, with a Method for their Determination in Plant and Animal Tissue (February 22, 1949)	11
MARY MITCHELL ALEXANDER The Immune Response of Man to <i>Pasteurella tularensis</i> (June 1, 1949)	17
KENNETH WARD CROSBY The Diplomacy of the United States in Relation to the War of the Pacific, 1879-84 (June 1, 1949)	21
LOUIS JOSEPH PECORA Electrocardiographic Changes in Rats on Thiamine Deficient Diets (June 1, 1949)	33
BENJAMIN M. AXILROD The Theory of the Triple-Dipole Interaction (November 11, 1949)	40
JAMES HAROLD COBERLY The Growth of Nationalism in American Literature, 1800 to 1815 (November 11, 1949)	50
HABEEB BACCHUS Functional Activity of the Zones of the Adrenal Cortex as Indi- cated by Asteroid and Ascorbic Acid Histochemistry (Feb- ruary 22, 1950)	59
DANIEL LOUIS REVERDIN Electron Optical Exploration of Space Charge in a Cut-Off Magnetron (February 22, 1950)	63
HAROLD FRIEDLANDER Studies in Experimental Infections of Albino Rats and Mice (May 31, 1950)	67

JACK LONDON RADOMSKI The Metabolism and Pharmacological Actions of Lithium (May 31, 1950)	74
WAYNE DAVID RASMUSSEN United States Plant Explorers in South America During the Nineteenth Century (May 1, 1950)	79
LEO ROBERT GOLDBAUM Studies on the Binding of Barbiturates to Proteins and Its Possible Relation to Their Disposition and Action in Animals (November 11, 1950)	88
JAMES THOMAS HICKS The Relationship of Skeletal Muscle Tone to Carotid Blood Pressure (November 11, 1950)	96
MERRIAM ARTHUR JONES An Investigation of the Reaction of Nitrosyl Chloride with 1- and 2-Pentene (November 11, 1950)	106
WILLIAM ELIAS POEL Physiologic Effects of the Tumor-Necrotizing Bacterial Poly- saccharide of Shear (November 11, 1950)	112
EUGENE WORTHINGTON RICE A Study of the Metabolism of D (—) Arabinose in the Rabbit (November 11, 1950)	121

DOCTOR OF JURIDICAL SCIENCE

JOHN BENJAMIN OLVERSON The Clifford Regulations: a Case Study in Administrative Legislation (June 1, 1949)	127
---	-----

DOCTOR OF EDUCATION

JOHN FREDERICK BROUGH The Program of the Occupational Information and Guidance Service, United States Office of Education, 1938-1948 (June 1, 1949)	135
FRANCES HOLLIDAY The Teaching of Methods in the Preservice Education of Ele- mentary Teachers (November 11, 1949)	143

WILLIAM SAMUEL RUMBOUGH Management of the High School Principal's Office (November 11, 1949)	149
HOWARD ODIN JOHNSON The Development of More Effective Methods of Training Electronic Technicians in the Navy (February 22, 1950)	157
JAMES HERRICK HALL Criteria for the Administration of Library Service in Christian Education in the Independent Autonomous Church at the Local Level (May 31, 1950)	163
HAROLD MAURICE WILSON Management Planning in Secondary Schools (May 31, 1950)	175
RALPH FREDERICK WILLIAM BRIMLEY The Management of Elementary Schools (November 11, 1950)	184
RALPH CALVIN GEIGLE The Relative Efforts of the States to Support Public Education (November 11, 1950)	193

SUMMARIES OF DISSERTATIONS
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ECONOMICS OF STRATEGIC TARGET SELECTION

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In any modern industrial country, a vast and complex industrial structure has been developed to produce the goods and services demanded by its inhabitants during peace and war. An analysis of the flow of output from the various parts of this industrial structure reveals the dynamic character, as well as the profound complexities of industrial relationships and the critical interdependence of the various stages of production. In analyzing the flow of output in a dynamic economy, time is of the essence. Particularly during wartime it is almost impossible to exaggerate the importance of the time factor.

The flow of output through the industrial pipe line is occasionally interrupted by many causes, including labor strikes, material shortages resulting from temporary failures of the self-adjusting mechanisms of the economy, and physical factors, such as earthquakes, storms, fire, explosions, malicious damage, and acts of war.

Intentional interference with production in an enemy country is known as economic warfare. The type of economic warfare which has received most attention from economists is the blockade, which also was the most effective type during the period from the Napoleonic wars to the end of World War I. During World War I other measures were developed to supplement the blockade by further limiting the trade between belligerents and neutrals. Another type of economic warfare which has been practiced to some extent for a long time is direct interference with production by raids designed to destroy factories and transport facilities. For example, the French employed this type of economic warfare very successfully in their wars (beginning in 1830) with the Arabs in North Africa, and the northern armies similarly employed it against the South during the American Civil War. Aircraft were first used in this type of economic warfare in 1914, but on a very small scale. Military writers freely predicted the potential importance of aircraft in this respect even before World War I. But before World War II there appeared in the literature on economic warfare very little mention of direct interference with production within an enemy country. In fact, it was not until after air power had been developed to the point at which it could pose a serious threat to an enemy's basic war supporting economy that the potentialities of this type of economic warfare became fully and generally appreciated.

There are many points in an enemy war economy at which air power can be applied in order to interrupt the flow of output. There are

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literally thousands of plants and other facilities in any large industrial nation against which air power might be so used; but it is inconceivable that any country, even in the atomic age, could mount an air offensive adequate for the destruction of all the capital equipment in another large industrial country. For this reason and because attacks against certain plants would affect the enemy economy more adversely than would attacks against others, it is very important in time of war to determine precisely the facilities against which air power can be used most effectively. The solution of this problem requires analyses of the economic vulnerability of the enemy war economy to attacks against various particular plants and groups of plants, the destruction of which is within the capabilities of available air power. Such analyses do not include the analysis of military weaknesses or the vulnerability of countries to attacks against their military forces. Nor do they include the analysis of psychological weaknesses, or the vulnerability of countries to psychological warfare. They do include the analysis of economic weaknesses and the vulnerability of countries to actions designed to reduce their economic war potential.

While the principal use of economic vulnerability analysis is in the selection of strategic targets* for limited bombing means (a short-run problem), it also may be used in determination of requirements for bombing programs designed to produce specified results and in comparisons of the relative merits of proposed weapons, bases, and long-range strategic plans. Two widely divergent basic approaches to strategic target selection will be considered briefly. Each is to be treated as a theoretical extreme—not as a practical approach. One of these approaches involves a search for an Achilles heel in the enemy war economy. The object of the search must be so small and vulnerable that it can be destroyed at small cost and so significant that its destruction will produce a decisive or at least a very substantial reduction in some major component of enemy military strength. The second approach is the approach of the "classical" economist (a term applied here to mean the economist who minimizes the significance of economic friction). Under the assumption that, when a plant is destroyed, adjustments involving the flow of capital, labor, and management will be made quickly, it may be argued that acceptable substitutes will be promptly forthcoming and that the only effect of the destruction of one plant is some small diminution of total output. Under this theory, the conclusion is reached that the optimum targets are those plants against which attacks can effect a maximum reduction in economic productivity, regardless of type. It is obvious that the essential difference in the two approaches lies in the assumptions concerning economic friction. The "classical" approach

* Strategic targets are those targets attacked by an air force in carrying out its strategic function which is the reduction of the enemy's economic war potential.

is based on the assumption of a total absence of economic friction, whereas the Achilles heel approach is based on the presence of economic friction of the highest order. The assumptions of neither approach are in conformity with the conditions of reality in any nation. Therefore, neither of these extreme approaches is adequate for practical application. The approach that should be followed in any case lies somewhere between these two extremes; just where depends upon a number of factors. Included among these are the degree of flexibility of the enemy economy, the nature of the strategic objective, the importance of the time factors, the quantity and quality of available bombing means, the availability of economic intelligence concerning the enemy, and postwar economic considerations. The optimum approach is that which is as close to the Achilles heel approach as these factors will safely permit.

In each case the relative value of an interdiction* program varies with the productivity of the program and inversely, with the cost of the program.

The productivity of interdiction is measured in terms of the accomplishment of the strategic objectives, i.e., certain reductions in economic war potential. The productivity of an interdiction program designed to reduce production of any product during any given period varies directly with the essentiality of production during this period and also with the effectiveness of the interdiction program (in terms of the percentage of curtailment).

The essentiality of production of any product during any period depends upon the essentiality of new supplies of the product and upon the extent to which the new supplies can be obtained during the period of analysis from sources other than production (such as imports, reserves, repair, and salvage). While the essentiality of new supplies is basically a military criterion, it is analytically comparable to the concept of consumers' preference and, as such, may be regarded as reflecting the quantitative importance of the use of any material or product for military purposes. But the essentiality of new supplies depends not only upon the military importance of the use for which they were intended; it depends also upon closeness and quantities of substitutes.

The effectiveness of an interdiction program varies directly with the percentage of capacity denied to the enemy and with the ratio of the length of the actual interdiction period to the length of the period of analysis; except that the interdiction must cut through the cushion of non-essential capacity before it becomes effective at all.

In the cases of multiple-industry interdiction programs, productivity is not simply equal to the sum of the productivities of independent stop-

* The infinitive "to interdict" is used to mean to prevent through strategic attack. Interdiction of production or transport means a stoppage or reduction of production or transportation as a result of strategic attack.

pages in all industries involved. The essentiality of production in any industry depends in varying degrees upon the status of other industries. Perhaps the best solution to the problem of interdependence is to consider all industrial categories (involved in an interdiction program) one at a time (in any desired order) and to evaluate the essentiality of production and the effectiveness of interdiction on the basis of anticipated results in previously considered, but not subsequently considered, industries.

It will be remembered that in determining the relative values of interdiction programs, one of the principal factors to be considered is the cost of interdiction (the other being productivity, which has just been discussed). While costs may be variously defined, it appears that for purposes of evaluating interdiction programs it is adequate to determine costs in terms of tons of bombs required, with such adjustments as appear necessary for differences in distance from base to target. The cost of an interdiction program will, of course, be the sum of the costs of maintaining the required reduction in capacity at all plants involved. The cost of maintaining the required reduction in capacity in each plant during a given period is equal to the cost of each attack multiplied by the required number of attacks against that plant during that period.

The cost of each attack against any plant varies directly with the bomb tonnage which must be dispatched from the base in order to achieve the required reduction in capacity and inversely with the percentage of the aircraft's normal bomb-load that may be carried from base to the target. The bomb tonnage which must be dispatched depends upon the tonnage that must be released over the target and the percentage of planes dispatched that will reach the target. In turn, the tonnage that must be released over the target depends upon the appropriate bombing accuracy, the pattern of bomb distribution, the size of the target area, the level of damage required, the functional vulnerability of the plant, the physical vulnerability of its structures and equipment and the probability of success demanded.

The number of attacks that are required in order to maintain a stated reduction in capacity during a given period varies directly with the length of the period and inversely with the length of the time interval between attacks. The frequency of attacks depends largely upon the resilience or recuperability of the plant; but it also depends upon the level of damage effected in each attack. Any given reduction in productive capacity can be maintained by various combinations of levels of physical damage caused by each attack on the one hand and frequencies of attack on the other. Therefore, it is necessary to determine the most economic combination, i.e., that combination which will permit maintenance of the stated reduction in capacity at minimum cost.

As previously stated, the cost of an interdiction program is equal to

the sum of the costs of maintaining given reductions in capacity of all the plants attacked. But the problem arises as to how much reduction in capacity should be effected in each plant of the industry involved. Inasmuch as the unit cost of reductions in capacity varies from plant to plant, it is necessary (in order that the reduction in capacity be effected at minimum cost) that the distribution of the reduction among the various plants be made in such a way as to equalize the marginal cost of unit reductions in all plants that are to be attacked.

The cost of a single interdiction program involving two or more industries may be less than the sum of the cost of individual programs (each of which involves one of the same industries) for two independent reasons. First, there may be reductions in costs because certain plants serve two or more industries. Second, targets in two or more industries may be so situated that both or all may be destroyed in a single attack, at little more than the cost of destroying any one.

Both a principle of increasing returns and a principle of increasing costs are usually applicable to marginal increments of interdiction. The relationship between the two will depend upon both qualitative and quantitative aspects of use patterns and upon patterns of industrial concentration and physical vulnerability. In any event, the relationship between the marginal productivity and marginal cost curves will determine the optimum level of interdiction.

The possible economic interdiction programs are so numerous as to make it impossible to make a careful, detailed analysis and comparison of all of them. It will be necessary to eliminate most of them from detailed consideration on the basis of simple preliminary examinations. For example, an industry may be summarily rejected as a target system if its product has little importance from the standpoint of a war economy or if acceptable substitutes are available in adequate quantities. Even if the importance is great and even if acceptable substitutes are unavailable in adequate quantities, the industry may be rejected as a target system if adequate supplies can be obtained from sources other than production. Some industries may be rejected because of insufficient geographical concentration or because an insufficient percentage of the industry is within the radii of action of attacking forces. A large cushion of non-essential capacity frequently could be an adequate basis for rejection of an important industry as a target system, but usually cushion must be considered in relation to other factors. In some cases, industries may be rejected because of insufficient physical vulnerability or because of too great resilience or recuperability. Other target systems which pass these superficial tests must be subjected to more detailed productivity and cost analyses.

The procedure in target selection may well vary with the nature of the objective. If a target system is to be selected and attacked in order

to achieve a specific and limited objective which appears to require only a portion of available bombing means, the first step might be an enumeration of alternate sets of conditions which reasonably can be expected to bring about the accomplishment of the objective. The next step might be the selection of the various target systems against which attacks appear to be relatively efficient means of creating each set of conditions on the basis of superficial consideration of the various factors affecting the productivity and cost of interdiction. The third step might be the determination of the percentage by which the capacity of each targetable installation in each target system must be reduced in order to create the necessary conditions for achievement of the objective. The fourth step might involve the estimation of the cost of effecting the required reduction in capacity in each plant in each target system. The final step then would be the comparison of the total costs of the required degrees of interdiction in the various target systems and the selection of that system against which the necessary degree of interdiction could be achieved at minimum cost.

If a target system is to be selected for an attack program designed to achieve a broad general objective, the procedure to be followed might be somewhat different from that suggested in the preceding paragraph. primarily because it may be assumed that while available bombing means may be more than adequate for a specific limited objective, all available means may be employed in the furtherance of a broad general objective. In the latter case, the first step might be the selection of the various target systems which appear reasonably profitable on the basis of superficial consideration of the various factors affecting the productivity and cost of interdiction in the light of the pertinent objective and the quantity and quality of the available bombing means. The second step might be the determination of the percentage by which capacity can be reduced in each target system by employment of the available bombing means. The third step might involve the evaluation of the productivity of the degree of interdiction in each of the various target systems thus determined to be procurable with the available means. The fourth and final step in the procedure would be a comparison of the productivities of achievable levels of interdiction in the various target systems and selection of that system against which an attack program with the means available would be most productive.

The theory presented in this dissertation is based largely on the experience of the Allies during World War II in their strategic bombardment of Germany and Japan. The data collected by the United States Bombing Survey in Germany and Japan provide both a foundation for the theory and material for testing its applicability. While no rigorous application of the theory to the facts of wartime Germany and Japan has been attempted, more superficial application has led to certain fairly

definite conclusions concerning the economic vulnerabilities of Germany and Japan during the past war.

It appears that the most menacing of Germany's capabilities against the Allies and their strategic air forces were most vulnerable to Allied attacks against Germany's liquid fuel, and particularly its synthetic oil facilities. These capabilities were also highly vulnerable to attacks upon facilities which produced certain types of aircraft components.

The basic war-supporting economy of Germany was most vulnerable to a carefully planned transportation interdiction program with emphasis on the paralysis of rail transport but with due consideration to the necessity for blocking traffic on the more important inland waterways.

While Japan possessed no particularly menacing capabilities against the Allied countries per se, it appears that the most menacing of Japan's capabilities against the United States strategic air effort consisted of its combat aircraft and anti-aircraft armament. The highly concentrated Japanese aircraft engine and propeller industries represented the two strategic target systems, against which interdiction programs offered the greatest promise of limiting the Japanese supply and quality of combat aircraft. The equally highly concentrated electronics tube industry represented the Achilles heel of the Japanese anti-aircraft armament position.

As for the basic war-supporting economy, transportation even to a greater degree than in Germany and probably to a greater degree than in any other industrial country in the world, represented the outstanding economic vulnerability of Japan.

In arriving at these conclusions concerning the critical economic vulnerabilities of Germany and Japan primary consideration was given to the objective of accomplishing the mission of the armed forces in general, and the air forces in particular, at minimum cost.

It is noteworthy, however, that broader, including postwar, considerations of economy lend support to these conclusions, particularly in so far as they relate to the critical points of vulnerability of the basic war-supporting German and Japanese economies. If strategic attacks against Germany and Japan had been limited to such target systems as liquid fuels, aircraft engines, electronics tubes, and transportation, only a relatively small fraction of the physical destruction actually effected would have been necessary, the postwar rehabilitation burden upon the United States would have been substantially lighter, and the recovery of the German and Japanese economies would have been as rapid as their former enemies chose to tolerate.

In conclusion, it may be noted that economic vulnerability theory falls in that category of contemporary economic theory which is generally described as economics of war. More particularly, it is within that portion of war economics that is concerned with economic warfare. In

fact, in its broad sense, economic vulnerability theory may be viewed as embracing the entire field of economic warfare; for essentially the same theory as that presented above, after appropriate modification and substitution of factors, would be applicable to the evaluation and selection of programs of preclusive buying, blockade, boycott, export control, etc. In this sense, economic vulnerability theory may be regarded as a theory of international economic relations under conditions of war.

Economists who have concerned themselves with such problems as the elimination of unemployment and the maximization of production may be inclined to view as a perversion of economic science any efforts to apply it to the production of industrial and economic chaos. However, it is submitted that inasmuch as military victory in future wars may be even more dependent upon the prompt and economic use of available bombing resources than upon the further expansion of output, it is the responsibility of the economist to develop not only the constructive, but also the destructive applications of the science.

A STUDY OF SOME CHEMICAL INTERRELATIONSHIPS
OF ASCORBIC ACID, DEHYDROASCORBIC ACID, AND
DIKETOGULONIC ACID, WITH A METHOD FOR THEIR
DETERMINATION IN PLANT AND ANIMAL TISSUE

by MARY BARBARA MILLS*

The search for a method to analyze for ascorbic acid, dehydroascorbic acid, and diketogulonic acid on the same tissue filtrate by the coupling reaction of the latter two compounds with 2,4-dinitrophenylhydrazine began with consideration of a report of Penney and Zilva that the rate of coupling of dehydroascorbic acid and diketogulonic acid with dinitrophenylhydrazine are sufficiently different to allow analytical separation on this basis. However, the different conditions under which the coupling is carried out and the color developed in the Roe-Kuether and Roe-Oesterling methods does not allow the wide separation in coupling rates. Inasmuch as the color in the Roe methods is more specific, efforts to find a differential method based on the rates of coupling by altering the conditions were abandoned.

The easy reduction of dehydroascorbic acid to ascorbic acid by mild reductants might be the basis for differentiation, inasmuch as ascorbic acid does not couple with 2,4-dinitrophenylhydrazine in the time used for this step of the method. Diketogulonic acid, on the other hand, is not reducible back to ascorbic acid by these mild agents and will remain in a form which couples with the dinitrophenylhydrazine reagent after reduction. The possibility of a selective reduction was investigated.

The reducing agent of choice would be one which would act in a short period of time at ordinary temperature, and could be removed after the reduction to allow coupling with 2,4-dinitrophenylhydrazine to proceed without additional agents present in the tube to change the amount of color production. This ideal agent must also be removed from the reduced solution to allow oxidation and enable one to attain a value for the combined ascorbic, dehydroascorbic, and diketogulonic acids present in the original filtrate. Thiourea, stannous chloride, sodium sulfide, and hydrogen sulfide were tested at a number of concentrations, times of exposure, and temperatures. Hydrogen sulfide gas bubbled through the solution for fifteen minutes at room temperature was most efficient as a reducing agent, and filled all the requirements mentioned.

The optimum pH for the reduction of dehydroascorbic acid by hydrogen sulfide was investigated. Various acids including metaphosphoric, trichloroacetic, and hydrochloric were used, and hydrogen sulfide reduction was carried out at pH values from 0.95 to 7.0. The results obtained

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in this series indicated that hydrogen sulfide gas bubbled through the solution in a standard manner for fifteen minutes would completely reduce the dehydroascorbic acid at all pH values in the range from 1.20 to 5.00. Metaphosphoric acid in 4 and 5 per cent concentrations gave satisfactory pH ranges for maximum reduction in fifteen minutes, and the addition of 0.5 per cent stannous chloride did not change this result. The deproteinizing mixture of 5 per cent metaphosphoric acid with 0.5 per cent stannous chloride included to protect the ascorbic acid from oxidation provided a satisfactory medium for the quantitative reduction of dehydroascorbic acid.

Diketogulonic acid was known to be unstable in the presence of hydrogen sulfide from the work of Penney and Zilva. (42) Conditions which influenced the stability of diketogulonic acid in the presence of hydrogen sulfide were investigated; various pH values, times of exposure to the gas, and temperatures at which exposure took place were tried; the results indicated that diketogulonic acid shows the greatest stability in the presence of hydrogen sulfide when the pH was below 1.30 and the temperature in the normal range. With fifteen minutes exposure to the gas under these conditions, less than 3 per cent of the diketogulonic acid was changed to a form which would not couple with 2,4-dinitrophenylhydrazine. Since the 5 per cent metaphosphoric acid-0.5 per cent stannous chloride has a pH of 1.25-1.30, this was acceptable both for protection of diketogulonic acid from hydrogen sulfide destruction as well as for allowing complete reduction of dehydroascorbic acid during fifteen minutes exposure to the gas.

Because of the more rapid initial coupling of the diketogulonic acid with the dinitrophenylhydrazine compared with that of dehydroascorbic acid, the exact rates of coupling of these two ascorbic acid derivatives with this reagent were determined. Comparison of these curves showed diketogulonic acid completed its reaction with 2,4-dinitrophenylhydrazine within the first five hours at 37°C., while dehydroascorbic acid continued to couple beyond the tenth hour. However, the amount of coupling attained by the sixth hour was 95 per cent of that reached at twenty-four hours. Investigation of ascorbic acid incubated at 37°C. with 2,4-dinitrophenylhydrazine showed that this material began to couple with the reagent after eight hours, which would make differentiation from dehydroascorbic and diketogulonic acids impossible after this time. To avoid this error from ascorbic acid, the six hour coupling period was adopted, since the difference in amount of coupling by dehydroascorbic acid was only 5 per cent less than that of diketogulonic acid at that time, and this constant amount could be allowed for when the amount of diketogulonic acid was appreciable.

The methods of extraction which would best protect the ascorbic, dehydroascorbic, and diketogulonic acids were carefully investigated.

The thiourea used in the Roe-Oesterling method was abandoned in favor of 0.5 per cent stannous chloride, since thiourea would not protect ascorbic acid from oxidation by oxyhemoglobin present in animal tissues. Half a per cent stannous chloride allowed less than 1 per cent oxidation of ascorbic acid in pure solution.

The spontaneous change of dehydroascorbic acid to diketogulonic acid was studied through a series of pH values and in the presence of various ions, and both high and low hydrogen ion concentrations were found to accelerate diketogulonic acid formation. Other ions were also shown to accelerate this conversion, including chloride and phosphate ions. The various methods of oxidation of ascorbic acid were shown to produce some diketogulonic acid along with the desired dehydroascorbic acid. Minimal diketogulonic formation was observed when potassium iodate was used for oxidation, and this agent was employed when pure dehydroascorbic acid was desired.

Diketogulonic acid was known to be unstable in the presence of hydrogen sulfide. This change in diketogulonic acid to a form not combining with 2,4-dinitrophenylhydrazine was found to be greatly increased in the presence of 1 per cent thiourea and 1.5 per cent stannous chloride. The destruction in the presence of stannous chloride was not due to the chloride ion, since 0.5 per cent stannous chloride plus sodium chloride did not show this increased destruction. During hydrogen sulfide reduction, not more than 0.5 per cent stannous chloride can be present if the diketogulonic acid is to remain unchanged.

The specificity of the colors produced with the 2,4-dinitrophenylhydrazine derivatives of dehydroascorbic acid by 85 per cent sulfuric acid and glacial acetic acid were tested next, in order to determine whether the suggestion of Bolomey and Kemmerer of substituting glacial acetic acid could be made use of. Derivatives of glucose, fructose, arabinose, pyruvic acid, and reductones with 2,4-dinitrophenylhydrazine were prepared, and the color developed with sulfuric and acetic acids. In all cases the color interference from these non-ascorbic acid substances proved to be greater with acetic acid than with sulfuric acid, when the spectral transmittance curves were obtained.

Orange juice filtrates, oxidized several ways, were tested as to color development with acetic and sulfuric acids, and the spectrophotometric transmittance curves read with the sulfuric acid developed color in all cases approximated the dehydroascorbic acid standard curve more closely than the acetic acid developed color matched the corresponding standard curve. The specificity of the color formed from the dehydroascorbic acid derivative of 2,4-dinitrophenylhydrazine with sulfuric acid is much greater than when the color is developed with acetic acid. The value obtained with orange juice in the latter case is a composite one, including ascorbic acid and interfering substances. The percentage sulfuric acid

used to develop the color, and the 540 m μ filter used to read the color in the Roe methods are both very close to optimum conditions for color development and color comparison.

On the basis of these experimental data, a method was devised for the analysis of ascorbic acid, dehydroascorbic acid, and diketogulonic acid in the same filtrate. The material was extracted with 5 per cent metaphosphoric acid-0.5 per cent stannous chloride solution, and a portion of this filtered extract was coupled *per se* with 2,4-dinitrophenylhydrazine to give the value for dehydroascorbic acid plus diketogulonic acid in the "original" solution. The remaining portion of the extract was placed in a large test tube and hydrogen sulfide was bubbled in by a sintered glass filter stick for fifteen minutes. This hydrogen sulfide treated solution was then divided into two portions. One per cent of powdered thiourea was added to one portion, dissolved, and then the solution was filtered to remove the stannous sulfide. The excess hydrogen sulfide was cleared from the solution by a stream of carbon dioxide, and the solution was coupled with dinitrophenylhydrazine to obtain the value for the unreduced diketogulonic acid in the original tissue on this "reduced" filtrate. The second portion of the hydrogen sulfide reduced solution was filtered free of stannous sulfide without addition of thiourea, and freed of hydrogen sulfide by drawing air through the solution for five minutes. This solution was then oxidized with bromine vapor, cleared of excess bromine by aeration, and coupled with dinitrophenylhydrazine after the addition of 1 per cent powdered thiourea. This gives a total value of ascorbic acid, dehydroascorbic acid, and diketogulonic acid in an "oxidized" solution.

Testing this method on pure solutions of a single compound and on mixtures of the three components showed excellent recoveries of each compound in the form in which it had been added. The method appeared quite satisfactory in pure solutions. When vegetable materials were extracted by the Waring blender and analyzed by this method, however, more of the oxidized ascorbic acid was found than had been anticipated, and the violent agitation of the solution by the Waring blender was investigated for its possible oxidative effect, and was found to cause a good deal of oxidation of ascorbic acid to dehydroascorbic acid. The use of the Waring blender was abandoned, and materials were extracted with sand in a mortar in subsequent analyses.

When the method was applied to animal tissues, the 0.5 per cent stannous chloride was found to be insufficient to prevent oxidation of ascorbic acid in the presence of oxyhemoglobin. Since this percentage of stannous chloride could not be exceeded during reduction with hydrogen sulfide if the diketogulonic acid was to be protected, the initial concentration of the stannous chloride was increased and then diluted with metaphosphoric acid to give the proper final concentration. The ascorbic

acid was found to be quite stable in the presence of oxyhemoglobin if 10 per cent stannous chloride in metaphosphoric acid was used for the initial extraction, and then diluted with 5 per cent metaphosphoric acid to a final concentration of 0.5 per cent.

With this modification in extraction no changes in the stability of ascorbic acid, dehydroascorbic acid, or diketogulonic acid were found from that observed in the 0.5 per cent stannous chloride. The method was not changed except for the introduction of this additional step in the extraction procedure.

Known amounts of ascorbic acid, dehydroascorbic acid, and diketogulonic acid were added to plant and animal materials, and excellent recoveries were obtained in all cases except dehydroascorbic acid added to blood. The latter addition resulted in some diketogulonic acid formation, and some loss of total. This was obtained repeatedly when the dehydroascorbic acid was added to blood before stannous chloride. It was therefore assumed to be a true effect of blood on this compound, and was noted for future metabolic investigation. Dehydroascorbic acid added to blood after the stannous chloride was recovered unchanged in the amounts added.

Normal guinea pigs were killed with nembutal and the tissues analyzed for their content of ascorbic, dehydroascorbic, and diketogulonic acids. Only very small amounts of the two oxidized forms of vitamin C were found; most of the ascorbic acid present in animal tissues is in the reduced state. The small amount of dehydroascorbic acid, and occasionally of diketogulonic acid present may be due to autolytic changes, or to oxidation on the cut surface of the tissue during sampling. The analysis of sufficient animals should establish a control value for this oxidized portion of the vitamin C which will serve as a normal in following the possible metabolism of ascorbic acid.

Plant tissues were next subjected to analysis by this method in an effort to test whether the procedure was reliable, and to determine the degree of oxidation of the ascorbic acid present in foods normally available. Market purchased fresh foods and canned, frozen, and dehydrated foods were analyzed. The results showed very little diketogulonic acid to be present in fresh foods, but some dehydroascorbic acid was usually present. Canned foods contained very little more of these oxidized products of ascorbic acid than did fresh foods, but frozen foods showed considerable oxidation except in samples which appeared to be in an excellent state of preservation. Dehydrated foods contained considerable diketogulonic acid and more dehydroascorbic acid than the other types of processed foods. This was especially true of the samples desiccated at elevated temperatures. Samples which had been processed under milder conditions at a more recent date were in as good a state of preservation as foods in the other classes analyzed.

The changes in the ascorbic acid fractions occurring during storage were tested in two different types of foodstuffs: orange juice where the acidity and natural protectants combine to make ascorbic acid most stable, and a slurry of white potato where the high pH and oxidative enzymes combine to greatly decrease the stability of the vitamin C. These two materials were stored in the refrigerator next to the freezing coils at 2°C., and aliquots were removed for analysis at varying intervals.

In the orange juice, the ascorbic acid was all present in the reduced state at the initial analysis. On the next analysis three days later a small amount of dehydroascorbic acid had been formed, and this amount gradually increased with the storage time. No diketogulonic acid was detected until the thirteenth day of storage, and then this amount increased until on the last day of analysis this fraction comprised the major percentage of the total. The sum of the three compounds remained remarkably constant for the first month of storage, so that although the state of the ascorbic acid had changed considerably by the twenty-eighth day of storage, the total amount of the three fractions was the same as on the day of extraction. By the thirty-eighth day the total had fallen off to 85 per cent of the original.

The potato slurry showed no ascorbic acid to be present on the initial analysis. Because of the pH and oxidative enzymes, all the ascorbic acid had been converted to dehydroascorbic acid, and a small amount of diketogulonic acid also had been formed during the extraction procedure. After six hours the amount of diketogulonic acid exceeded that of dehydroascorbic acid, and the remaining analyses showed this fraction continuing to increase at the expense of the dehydroascorbic acid. The total of these two compounds remained quite constant for about one week, and then it began to decrease. By the nineteenth day of storage less than 7 per cent of the original total could be accounted for in the slurry in the forms being analyzed.

The contrast between these two types of materials in storage illustrates at once the behavior of ascorbic acid and derivatives under different conditions of acidity, and the validity of the method used for measuring these two compounds in a complex mixture such as a plant extract. The fact that one component increases only as another decreases, and the total of the three remains constant is excellent evidence of the specificity and accuracy of the method developed here for the analysis of ascorbic, dehydroascorbic, and diketogulonic acids.

THE IMMUNE RESPONSE OF MAN TO *Pasteurella tularensis*

by MARY MITCHELL ALEXANDER *

It has long been known that recovery from an infection with *Pasteurella tularensis* results in an immunity which often prevents the occurrence of the disease upon subsequent exposure to this organism. With this knowledge, the prophylactic measure of vaccinating members of groups exposed to tularemia has been employed. Largely because of the lack of an adequate laboratory animal, a demonstration of the efficacy of this vaccination procedure has been experimentally difficult to demonstrate. Not only has the proof of the adequacy of vaccination presented difficulties, but also the proof of the value of the therapeutic use of immune serum.

Studies on man, when the opportunity was available, have contributed most of the knowledge concerning immunity in tularemia. There has been a controversy by workers in this field as to whether or not sera from immunized animals afforded any protection against infection. It has been demonstrated in a large number of cases, however, that immune serum is valuable in the treatment of the disease in man. It has also been shown that prophylactic vaccination, even though it does not always prevent the onset of disease, does significantly decrease the severity of the symptoms associated with the disease.

Previous to the present study, an antigen occurring in *Past. tularensis* was described which would react with antisera *in vitro*. It was later demonstrated that the level of antibody in sera of hyperimmunized animals, as determined by a serological technique employing this antigen, closely paralleled the protective capacity of the sera for white rats which were experimentally infected.

The present study was undertaken to assess the immune response of man to vaccination with, or recovery from an infection with *Past. tularensis*. For the determination of antibody and its reactivity the method of quantitative precipitation was chosen because it is the most precise method known, and because it gives more information concerning a serum than any other known method. This method has been demonstrably adequate for the description of antibody formed in man in response to a number of antigens, including those from the Pneumococcus and the Meningococcus.

The technique of carrying out the quantitative precipitin reaction was essentially the standard technique, except that it had been modified to be applicable to sera of low antibody content. Modifications included

* B.S. 1939, Oklahoma Agricultural and Mechanical College; M.S. 1945, University of Michigan; Ph.D. conferred June 1, 1949.

the absorption of complement onto a forming egg albumin-anti-egg albumin precipitate rather than inactivation of complement with heat; an incubation period of from ten days to two weeks because of the slower rate of precipitation in sera of low antibody content; the use of large amounts of serum for each analysis, sometimes as many as 8 ml.; and the use of a colorimetric procedure, employing the use of the Folin-Ciocalteu phenol reagent for the determination of nitrogen instead of the more classical Kjeldahl nitrogen determination which is not sensitive enough to measure the small quantities of precipitable nitrogen encountered in human sera.

Precipitable antibody was measured in the antibody excess zone using various quantities of antigen sufficient to insure an antibody excess when a constant amount of antiserum was present. From the results of these determinations, the antibody-antigen ratio of each precipitate in the antibody excess zone was calculated. Heidelberger's theory and equation were applied to determine the amount of antibody, the ratio of antibody to antigen, and the total amount of antigen combined in the equivalence zone. These values were used in the comparison of sera from recovered and vaccinated individuals.

The antigen employed in these studies was the one previously mentioned. It was a phenol-soluble, water-soluble polysaccharide prepared by phenol extraction of acetone-extracted cells which had been grown in a liquid medium. The purification of the preparation consisted of three reprecipitations with ethyl alcohol. In the course of this study, three preparations were made by this method, two from the virulent strain, *Past. tularensis*, strain Schu, and one from the avirulent strain, *Past. tularensis*, strain 38. On serological analysis, employing a known positive goat serum in the quantitative precipitin technique, preparations from the two strains mentioned were found to be similar. This polysaccharide fraction of *Past. tularensis* is, therefore, probably not concerned with the relative virulence of the organism. From this knowledge, and the knowledge that no other chemical difference is known to exist in virulent and avirulent strains, it was suggested that the virulence of *Past. tularensis* may be a function of the physiology of the cell, rather than of a single component which can be isolated from it. It was further suggested that the technique of quantitative precipitation could serve as a tool in the study of other antigenic preparations from this organism.

Analyses of human sera included three from normal individuals, eleven from individuals who had received varying quantities of Foshay's vaccine, and sixteen from persons who had been recovered from an infection for various periods of time. Two of the recovered individuals suffered reinfections, and sera were obtained from them after the reinfections. A series of analyses was done on the serum from one

person at various stages during an infection, and while convalescent from the infection with *Past. tularensis*.

Inspection of the results of the analyses of sera from normal individuals who had never encountered the organism, either through vaccination or infection, revealed that there was no antibody present which was reactive with the polysaccharide antigen. The results of analyses on the sera of humans who had been vaccinated, or who had recovered from an infection with *Past. tularensis* demonstrated the following: (1) the absence of a correlation between the amount of vaccine administered and the antibody response following vaccination; (2) the lack of correlation between the time since recovery and the antibody level; (3) the occurrence of more antibody in the sera of humans after infection than after vaccination; and (4) the greater combining capacity for antigen, molecule for molecule, of antibody in sera from vaccinated individuals than from recovered individuals.

From results of analyses in the two cases of reinfection, it was found that there was an increase in the total amount of antigen combined per volume of serum after the reinfections, but a diminution in the amount of antibody present in that quantity of serum.

The serial analyses on a person with, and convalescent from an acute infection revealed an immune response greater than that observed in any other serum. This large amount of antibody, occurring one month after the onset of symptoms, is in contrast to the small quantity which was present one day after the administration of aureomycin had been discontinued.

Because certain of the individuals, both vaccinated with and recovered from an infection with *Past. tularensis*, were liable to exposure, certain deductions in regard to the value of antibody in the resistance of man to tularemia could be made. It was suggested that the immune response in man might better be determined by measuring the amount of antigen combined by a given quantity of antiserum, rather than by measuring the total quantity of antibody. A measurement of the antigen combined would reflect both the quantity, and the reactivity of the antibody with antigen. This conclusion was based primarily on the following evidence: (1) the occurrence of an amount of antigen combined in the sera of three vaccinated individuals, two of whom were exposed and demonstrably refractory to infection, which was similar to an amount found in the sera of three recovered persons, two of whom had escaped infection on exposure to the virulent microorganisms; (2) the finding that the serum from a reinfected person, two months after the reinfection occurred, did not contain as much antibody as in the previous analysis, but the antibody present reacted with more antigen; and (3) the demonstration by Foshay that the antibody level, assayed in terms of the milligrams of antigen combined, closely paralleled the protective

capacity of hyperimmune animal sera in experimental studies in which the white rat was used as an experimental animal.

From the conclusion that the amount of antigen combined by a unit volume of serum is an indication of the immune state of the person, it was suggested that a simple serological test which measured the amount of antigen combined by a given quantity of serum might serve as an adequate expression of the immune response of man to vaccination.

Because of the persistence of an amount of antibody not dependent on the length of time since infection in the serum of a recovered person as many as fourteen years following infection, and because of the nature of the disease, the theory of the persistence of immunity due to the residence of live antigen in the host's cells was proposed. This live antigen situated strategically in the tissues, could provoke the constant formation of immune globulin without inciting the disease.

From rat protection tests, it was demonstrated that hyperimmune goat serum was protective, but that after the serum had been absorbed with the polysaccharide antigen, the protective capacity was considerably lessened. It was also shown that the serum from vaccinated individuals contained some protective antibody, as evidenced by a lower mortality rate and a delay in death in experimentally infected white rats.

THE DIPLOMACY OF THE UNITED STATES IN RELATION TO THE WAR OF THE PACIFIC, 1879-84

by KENNETH WARD CROSBY •

BOUNDARIES AND NITRATES

When Chile landed troops at Antofagasta on 14 February 1879 to "revindicate" her claim to territory in the Desert of Atacama on the Pacific coast of South America, she brought to a violent end a boundary controversy with Bolivia of nearly forty years' duration. The sanguinary War of the Pacific which followed between Chile and the allied republics of Peru and Bolivia ended five years later in complete success to Chilean arms and diplomacy, with the annexation of the entire Bolivian littoral and the Peruvian Province of Tarapacá, in addition to extended occupation of the Provinces of Tacna and Arica. European governments early manifested a readiness to intervene to safeguard investments of their citizens in the area, but were prevented from doing so effectively by the United States, which discouraged their efforts while seeking in vain during three administrations to restore peace through repeated offers of mediation.

Spain unwittingly laid the foundations for the War of the Pacific by failing to delimit clearly the boundaries within her colonial empire. But the boundary between Chile and Bolivia in the Desert of Atacama remained a matter of amiable indifference in both Santiago and La Paz, until President Manuel Bulnes of Chile advanced a claim to the twenty-third parallel in 1842 in the hope of discovering in this desolate region a source of public revenue such as Peru was realizing from her guano deposits farther up the coast in Tarapacá.

According to the best authorities the boundary should have been at Paposo at twenty-five degrees. Bolivia consequently protested the pretensions of Bulnes and took measures to exclude Chilean guano operations from the region. Periodic diplomatic exchanges failed to achieve a settlement until war appeared imminent in 1866. The activities of a Spanish fleet in the Pacific at this juncture, however, brought Chile, Bolivia, Peru, and Ecuador into an alliance for joint resistance.

This new relationship produced a Chile-Bolivian treaty the same year, which placed the boundary at twenty-four degrees and stipulated that each would share the export taxes on guano and minerals between the twenty-third and twenty-fifth parallels. Complications immediately arose with the discovery in this area of *caliche* beds (a nitrate which, like guano, is a rich fertilizer) near Antofagasta and of a rich lode of silver at Caracoles.

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Since Bolivia had neither the means nor the inclination to exploit these resources, the mendacious dictator, Mariano Melgarejo, granted a sweeping concession to the Antofagasta Railroad and Nitrate Company, organized in Valparaiso to exploit the *caliche* beds. Trouble soon developed because the treaty of 1866 failed to define clearly the nature of minerals: Bolivia undertook to tax the export of nitrate without sharing the proceeds. The treaty, therefore, only provided further issues for conflict.

Peru, meanwhile, became interested in the boundary between Chile and Bolivia on account of her own financial difficulties. Beginning in 1842 Peru had realized a princely income from the sale of guano in Europe, later supplemented by nitrate from *caliche* beds in Tarapacá. Through mismanagement, corruption, and an overly ambitious program of public works, however, her financial position had deteriorated until she faced bankruptcy in 1873. Intending to recoup her losses by nationalizing the production of nitrate, she wished to gain control of the operations at Antofagasta to have a monopoly of the product. She consequently signed a purportedly defensive alliance with Bolivia in 1873 to bolster resistance in La Paz to Chile's demands for revision of the treaty of 1866. The adhesion of Argentina to this secret alliance was sought, since she also had a boundary dispute with Chile in Patagonia. But the arrival at the critical moment of two new Chilean iron-clad war vessels rendered Peru's diplomacy abortive.

Bereft of Peruvian support, Bolivia signed a second treaty with Chile in 1874 which retained the boundary at twenty-four degrees but substituted for the joint-benefits clause a provision that no additional taxes should be levied on Chilean industries between the twenty-third and twenty-fifth parallels. On 14 February 1878, nevertheless, the current Bolivian dictator, Hilarión Daza, rashly imposed a tax of ten *centavos* on each *quintal* (one hundred pounds) of nitrate exported by the Chilean firm at Antofagasta. Despite every evidence that Chile would not submit, Daza decreed the sale of the property of the firm one year later to collect the arrears due under his tax. Chile forestalled him by the military occupation of Antofagasta on the day set for the foreclosure.

In the midst of military preparations to fulfill the obligations of the secret alliance of 1873, Peru commissioned a special envoy, José Antonio de Lavalle, to attempt mediation. Chile declared war on Peru on 5 April 1879, however, ostensibly because she refused to issue a categorical declaration of neutrality, thus renouncing the alliance. Actually, neither Peru nor Chile was loath to face a trial of strength to settle the issue of priority on the Pacific coast.

On paper, with double the population of Chile, the allies appeared the stronger, but Chile had the advantage of a more homogeneous population, a more stable government, a sounder economy, and, most impor-

tant, naval preponderance through her two new ironclad rams, the "Almirante Cochrane" and the "Blanco Encalada". Owing to the nature of the terrain, sea power was certain to be the deciding factor in the war.

MR. EVARTS BEARS AN OLIVE BRANCH

Even before the declaration of war foreign powers displayed a willingness to mediate the quarrel. In a conference with Chilean Foreign Minister Alejandro Fierro, United States Minister Thomas A. Osborn stated that his government would undoubtedly "lend its efforts to an amicable arrangement of the difficulties". The British Chargé d'Affaires, Drummond Hay, made a similar offer. And before the war was many months old, the British and the German governments made simultaneous overtures to Washington respecting joint mediation, which Secretary Evarts rejected. Similarly, direct offers by Ecuador and Colombia through ex-President Urbina and former Minister of Foreign Relations Dr. Pablo Arosemena, respectively, met with no encouragement from the belligerents.

The unauthorized attempt at mediation in July 1879 on the basis of the *status quo ante bellum* made by the minister to Bolivia, Judge S. Newton Pettis, was the first formal diplomatic effort of the United States. Complicated by the meddling of a bearer of State Department dispatches, Colonel Horace Fisher, the fruitless journey of Pettis to Santiago only aroused the suspicions of Chile toward his government.

On 21 May the Peruvian fleet drew first blood by sinking the "Esmeralda" at Iquique—a pyrrhic victory since one of Peru's two ironclads, the "Independencia", was lost on a rock in the engagement. For five months thereafter Admiral Miguel Grau held the Chileans at bay with the "Huascar", before losing his life when his vessel was captured by Chilean forces off Punto Angamos on 9 October 1879. This decisive battle gave Chile command of the sea and with it the freedom of movement essential to victory.

The Chileans immediately took the offensive, landing 13,000 troops in Tarapacá, where they defeated the allies at San Francisco, whence they marched overland to crush the enemy at Tacna and at Arica in June 1880. Thus Chile came early into control of the guano and nitrate resources of Peru, the exploitation of which furnished most of the funds for continuing the war.

These reverses produced revolutions in both allied countries. General Narcisco Camero replaced Daza as dictator of Bolivia and managed to remain in power after the rout at Tacna, although he struck no effective blow in the war thereafter. Peru found a leader of a different stamp in Nicolás de Piérola who assumed arbitrary powers on Christmas Day 1880 in order to galvanize his country into more effec-

tive resistance. Both dictators were promptly recognized by the United States.

Secretary Evarts directed his agents to forestall another movement for mediation by the European powers, aroused over neutral losses incidental to Chile's offensive, in the summer of 1880. In this connection an unauthorized visit to Santiago by Isaac P. Christiancy, minister to Peru, further offended the susceptibilities of Chile without accomplishing any good. The most ambitious peace effort of the United States emerged from Evarts' instructions, nevertheless, when delegations from all three belligerents assembled aboard the U. S. S. "Lackawanna", at Arica on 20 October 1880 for a conference under the mediation of their respective United States ministers.

The Conference of Arica was foredoomed through the failure of Minister Christiancy to inform Piérola that Chile would demand cession of Tarapacá as a *sine qua non* of peace. Further complications arose through Bolivia's having attended on the assurance of Minister Charles Adams that his government would offer arbitration in case direct negotiations broke down. Peru refused to cede Tarapacá, Chile rejected arbitration, and the conference accomplished nothing.

No additional effort toward peace occurred under Evarts. His negative policy of careful respect for belligerent rights and of discouraging European intervention, while offering United States mediation, was undoubtedly in the best tradition of his predecessors, but it was scarcely energetic enough to restore peace.

AWAITING A DECISION AT ARMS

Immediately after the Conference of Arica, Chile launched 24,000 troops under General Baquedano against Lima. On 13 January 1881 they stormed the outer Peruvian defenses at Chorrillos, then prepared to attack Piérola at Miraflores. Two days later the defenders were routed from this position despite a truce which the diplomatic corps had arranged for the discussion of peace terms. Having fled to the mountains, Piérola sent a communication to the diplomatic corps charging the Chileans with treachery in breaking the truce, thereby complicating the arrangement of peace, because Chile promptly refused to deal with him until he should disavow these charges.

Meanwhile, Lima was saved from pillage and arson by mobs of Peruvian soldiery and from almost certain sacking at the hands of the Chileans, whose troops would have been fired upon by this mob on entering the capital, had not a self-constituted "Urban Guard" of foreigners restored order prior to the Chilean occupation of the city.

Chile at once adopted a policy of heavy handed occupation, with Peru bearing the expenses until she should be willing to cede the rich Province of Tarapacá. Minister Christiancy early noted that nothing but

resolute intervention by the United States would prevent this result. In pursuit of her policy, Chile despoiled Peru of a great variety of public property, levied heavy contributions on private citizens, and, most important, systematized the exploitation of Peru's guano and nitrate resources. All this made the occupation actually profitable, saving the economy of Chile from probable collapse.

Europeans were interested in the disposal of Peru's resources since they held bonds worth some 35,000,000 pounds sterling secured by Peru's guano. Chile cleverly placated part of these creditors, principally British, by sharing one-half of the proceeds from the sale of one million tons of guano. But another group, largely French, including some English, German, and Italian creditors as well, proposed to furnish Peru the means to pay an indemnity instead of ceding territory, in exchange for a monopoly on the resources of Tarapacá until Peru's obligations were met. Agents of the *Crédit Industriel*, a French banking firm which would advance the money, sought the backing of the United States for this "Programme", to prevent objections on account of the Monroe Doctrine. Although refusing to commit the United States to the project, Secretary Evarts did not oppose it, while informing his agents about it in case a favorable opportunity developed to employ the plan. Minister Christiancy replied, however, that the proposal came too late—Chile would settle for nothing but territory unless compelled to do otherwise.

Although unsuccessful in arranging peace, Secretary Evarts and his agents made a better showing on neutral rights and duties. When Chile attempted to put the "Itata" and two other vessels under the protection of a neutral flag through a colorable transfer to a United States citizen early in the war, Evarts upheld Ministers Gibbs and Christiancy in their refusal to recognize the deal. Again, the United States envoys succeeded in getting Bolivia to recognize her treaty obligations respecting the seizure of neutral goods, when she attempted to issue letters of marque. Similarly, Minister Thomas A. Osborn was able to induce Chile to assume responsibility for any unnecessary losses to neutrals arising from her naval bombardments. And Christiancy took proper steps to safeguard the shipping interests of his country during the blockade of Peruvian ports.

On receiving complaints from Chile, the United States also took measures to fulfill its neutral duties by interrupting the flow of munitions, particularly torpedoes and torpedo boats, to Peru by way of Panama. But Christiancy refused to remove his consul at Iquique, Joseph W. Merriam, whom Chile accused of unneutral conduct.

The single triumph of United States diplomacy during the war occurred when a boundary dispute between Argentina and Chile was settled on 23 October 1881 through the mediation of Thomas O. Osborn

and Thomas A. Osborn, ministers at Buenos Aires and Santiago, respectively. To Peru, this success only increased the obligation of the United States to arrange an equitable peace on the Pacific, since it removed a threat on Chile's flank.

MR. BLAINE TAKES THE INITIATIVE

The inauguration of James A. Garfield brought to the State Department the most prominent political figure of the day, James G. Blaine. Although lacking in previous experience in diplomacy, Blaine believed in a vigorous foreign policy, which led him to take the initiative in South America in such a way as to raise more controversial issues than his predecessor and successor combined.

At the outset, his premature recognition of the provisional government of Francisco García Calderón in Peru in preference to Piérola, against the better judgment of Christiancy, complicated his peace efforts. Blaine's choice of new ministers, Stephen A. Hurlbut for Peru and Hugh Hudson Kilpatrick for Chile, was also unfortunate, for both promptly became strong partisans for the countries in which they resided. The policy of the new Secretary was to save Peru from a cession of territory if possible through a forthright offer of mediation.

Hurlbut at once took a decisive stand on the issues of the war. Determined to support Calderón in resisting cession of territory, he sent a memorandum to Admiral Patricio Lynch, commander of the occupation forces, which hinted at United States intervention. An open breach resulted between Hurlbut and Kilpatrick when the latter disavowed this stand in response to an inquiry from Chilean Foreign Minister José Balmaceda.

Additional indiscretions by Hurlbut appeared in a letter to Piérola calling upon him to step aside in favor of Calderón; in efforts to win the adhesion of guerilla leader, Andrés A. Cáceres, to the provisional government; in a protocol with Calderón leasing Chimbote Bay as a United States coaling station; and in a telegram to Argentina urging the recognition of Calderón by that country.

Blaine's management of affairs was further complicated by two financial claims against Peru, in addition to the importunities of the agents of the *Crédit Industriel*. John C. Landreau, a naturalized citizen, had earlier received some assistance from the State Department in pressing a claim for some millions of dollars, based on contracts made by his brother, a French citizen, for a share of extensive guano beds discovered in Peru. Blaine instructed his agents to call the claim to the attention of both Peru and Chile, to have it adjudicated in Peru, and to get its recognition as a prior lien on the guano of Tarapacá, if adjudged valid by Peru, in case that province were ceded to Chile.

The other claim, based on the pioneer discoveries of the commercial

value of guano by a French scientist, Alexandre Cochet, was wholly speculative in nature. Cochet had died a pauper in France in 1864, but a United States citizen in 1879 claimed to have purchased his rights against Peru. An eccentric New York lawyer, Jacob R. Shipherd, came into control of the claim and organized the bogus Peruvian Company to collect the fabulous sum of \$1,200,000,000. Shipherd managed to get the ear of some important men, including ex-President Grant and Senator Henry W. Blair, to help get the favorable attention of the State Department. For a time Blaine dealt with the claim, but abandoned it within a few months, condemning its promoter in the process. But Shipherd's maneuvers alarmed Chile and led to a congressional investigation of Blaine's administration.

Blaine refused steadfastly to give any encouragement to the agents of the *Crédit Industriel* despite repeated efforts on their part to get a statement from him. He did not oppose the "Programme", but he would do nothing to further the interests of this foreign corporation. Chile was uneasy, knowing that he was considering the plan, nevertheless.

Convinced that Calderón would not cede territory, Chile arrested him on 7 November 1881, ostensibly for disobeying orders of the occupation authorities. Hurlbut transferred his support to Admiral Lizardo Montero, the vice-president of the provisional regime, but Blaine demanded an explanation, thinking that Calderón's arrest was a thrust at the United States for having recognized him. Such an intention Chile naturally disavowed.

Before retiring from the Department on 19 December 1881, Blaine reprimanded both Hurlbut and Kilpatrick for their partisanship and indiscretions, while announcing that a special mission would handle the problem of peace. Possibly the rejection of an offer for joint action made by President Jules Grévy of France prompted Blaine to persist in his peace efforts.

A balanced judgment of Blaine's administration is difficult to reach, since the assassination of Garfield distracted his attention, and his most ambitious effort for peace—the special mission—was left in the hands of his successor. Blaine did not, however, supervise his envoys adequately, thereby only complicating the issues of the war.

THE TRESCOT MISSION: A LESSON IN FRUSTRATION

The special mission to the belligerents began well when Blaine selected William H. Trescot, the most competent diplomat available, to head it, assisted by the Secretary's own capable son, Walker Blaine. Using the arrest of Calderón as a lever, Trescot's instructions were designed to bring strong pressure (even to diplomatic rupture) on Chile to accept

an indemnity, or at least to permit peace negotiations without cession of territory as a condition precedent.

Having stopped briefly at Lima to canvass the situation, the special agents arrived in Chile early in January 1882, where they were accorded a warm personal welcome, tempered with uneasy expectancy. On 23 January Trescot telegraphed Chile's terms: cession of Tarapacá, plus 20,000,000 *soles* indemnity or cession of Tacna-Arica.

Blaine compromised Trescot's efforts somewhat by failing to entrust to him the invitations for all three belligerents to a proposed Pan American peace conference at Washington in November 1882, and by publishing, prior to retiring to private life, some of the instructions to Hurlbut and Kilpatrick. But the new Secretary, Frederick T. Frelinghuysen, made Trescot the victim of, perhaps, the worst fiasco in United States diplomacy when he altered Blaine's instructions, then submitted all the correspondence concerning the war to the Senate on 26 January, before the changed instructions reached the special mission, thereby allowing Foreign Minister Balmaceda, of Chile, to learn of the changes by telegraph before Trescot himself received them.

Trescot signed the Protocol of Viña del Mar with Balmaceda on 11 February, nevertheless, involving the terms above mentioned, in the hope of retaining Tacna-Arica for Peru if the cession of Tarapacá were granted. The receipt of a telegram from Frelinghuysen requiring negotiations only on the basis of an indemnity, however, and the news that the telegram containing Chile's conditions had been published, ruined Trescot's maneuver—his mission as well.

In private letters to Assistant Secretary J. C. B. Davis, Trescot strongly condemned the manner in which his mission had been mishandled and demanded his recall. He remained, though, on orders from Frelinghuysen, to propose arbitration by his government, which had no possibility of being accepted. Before returning home, Trescot also paid a visit to Admiral Montero in the interior of Peru, while Walker Blaine called at La Paz to reassure Bolivia that her interests were not being overlooked. Convinced that Chile would negotiate only with a Peruvian government so under her control as to assure the cession of Tarapacá and Tacna-Arica, the special agents left for the United States on 14 May 1882, their mission an utter failure.

The Trescot mission began with the best prospects of arranging peace of any effort undertaken by the United States. Perhaps Frelinghuysen reversed the original instructions, as widely claimed in the press, to avoid the threat of war with Chile, but the record indicates that Blaine intended to use only strong moral pressure. While there is no certainty that the mission would have succeeded under Blaine, it was foredoomed to failure when Frelinghuysen adopted methods which pointed suspiciously toward an ulterior motive—the discrediting of his predecessor.

DOMESTIC POLITICS IN FOREIGN RELATIONS

Since Blaine had retired to private life with the expectation that his two projects, the Trescot mission and the Pan American Congress, would be sympathetically handled, he entered the lists with vigor when the Arthur administration publicly reversed his policies. In the ensuing political struggle Blaine largely vindicated his whole administration of affairs.

Although no love was lost between Blaine and the administration after the death of Garfield, both sides wished to avoid reopening the schism in the Republican party. Even after his retirement, cordial social relations were maintained—the calm before the storm.

The general reaction of the press to Blaine's retirement was one of relief: his policies, while brilliant, were dangerous; Frelinghuysen would be a safer man. The first intimation of an about-face in South America, however, appeared in a letter from elder statesman Hamilton Fish to his friend, J. C. B. Davis, first assistant to Frelinghuysen. In accordance with Fish's warnings, Davis believed after a hurried examination of the correspondence that Blaine's policies were fraught with danger of war with Chile.

Davis convinced his chief of this view, hence the instructions to Trescot were altered on 9 January 1882, removing any cause for friction with Chile and practically recalling the invitations to the Pan American Congress. Blaine attempted unsuccessfully to prevent the inclusion of the Trescot correspondence with the other papers submitted to the Senate on 26 January. Perhaps the administration acted without political bias, but a letter to Fish from Davis revealed that he anticipated "a desperate fight" with Blaine.

For six months thereafter Blaine's struggle with the administration over his conduct of the State Department received almost daily attention in the press. He countered charges of warmongering, of improper interest in claims against Peru, of attempting to annex Peru, of duplicity in his dealings with President Arthur, and of desiring to create a great confederation in South America under United States leadership, by interviews to papers friendly to his cause, by an open letter on 4 February to President Arthur, in which he placed the president in a difficult position for changing his mind concerning the Pan American Congress, and by testimony before an investigation by the Committee on Foreign Affairs of the House.

This House investigation began in March as an inquiry into charges that State Department officials were corruptly interested in the claims, particularly Shipherd's Cochet claim, against Peru, but soon became a trial of Blaine's whole administration. Blaine was able utterly to discredit Shipherd, thereby clearing himself of numerous charges, to establish that he did not back the *Crédit Industriel*, to discount the various

rumors of his warlike intentions, and to prove that he had acted throughout with the knowledge and consent of President Arthur. Blaine's chief antagonist among the committee members, Representative Perry Belmont, made much, however, of Blaine's rather unwise handling of the Landreau claim. The report of the committee exonerated all State Department officials.

If the administration indeed had intended to ruin Blaine, their tactics backfired, for this domestic political struggle over foreign relations kept him before the public when his retirement from office might have relegated him to obscurity. He won the laurels in the contest, to emerge as Republican candidate for the presidency in 1884.

MR. FRELINGHUYSEN COUNSELS PEACE

With both Kilpatrick and Hurlbut dead, Secretary Frelinghuysen was free to appoint new ministers for carrying out his program to restore peace. But his method, epitomized in the phrase, "This state of affairs [political and economic stagnation in Peru], should be terminated, and will be if friendly counsels are allowed to prevail", suggests that he failed utterly to comprehend the intransigence of Chile.

A capable minister, Dr. Cornelius A. Logan, was sent to Santiago with wide discretionary powers to arrange peace. His instructions recognized that Tarapacá must go to Chile, possibly Tacna-Arica as well, but Peru should receive an indemnity. The new agent to Peru, James R. Partridge, was directed to support Logan's efforts and to convince Admiral Montero of the necessity of sacrifices by Peru. George E. Maney also went to Bolivia with instructions to follow the lead of his colleagues.

Logan launched upon a series of complicated negotiations immediately after his arrival on 7 September 1882, dealing with García Calderón, then a prisoner of Chile. Just when Logan thought he had found satisfactory bases for peace, the negotiations broke down in November on matters of procedure. He attempted to circumvent his difficulties by writing directly to Vice-President Montero in Peru to get his support for the cession of Tarapacá and the sale of Tacna-Arica as proposed to Calderón. The inadvertent publication of this letter ruined Logan's chances as a peacemaker. His proposals were significant, nevertheless, for they contained several features later incorporated into the Treaty of Ancón which restored peace.

Minister Partridge was deeply offended by Logan's having written directly to Montero. He had only himself to blame, since he had remained in Lima instead of joining Montero in the interior. Partridge's conduct had been strongly partisan in favor of Peru, so now Logan demanded that the Department settle the differences between them. Frelinghuysen did nothing. But Partridge was quickly disavowed and

recalled when news reached Washington that he had proposed joint intervention with the ministers of England, France, and Italy in January 1883.

The supreme peace effort of Frelinghuysen occurred in March on the strength of conversations with the agents of Peru and Chile in Washington, when he directed Logan to offer arbitration on the basis of cession of Tarapacá, with the arbitrator to dispose of the Tacna-Arica issue. This project had no chance for success since it involved the recognition of Calderón. Moreover, Chile had transferred her attentions to a new leader in Peru, General Miguel Iglesias.

A movement with Iglesias as "Regenerator President" had gathered momentum in the north of Peru for some months before Chile negotiated a preliminary peace protocol with him at Chorrillos on 12 May 1883, granting all that she had demanded in vain from Calderón. To assure no miscarriage of her plans this time, Chile stipulated that Iglesias would receive recognition only on the ratification of a treaty embodying the terms of the protocol.

After a final, futile effort to negotiate with Calderón, Logan proposed that he be accredited to all three belligerents, recognize Iglesias, and throw the influence of the United States behind a speedy peace. Instead, Frelinghuysen appointed Seth Ledyard Phelps to the legation at Lima and Richard Gibbs to La Paz, with instructions only to report the passing scene. From this time forward the United States exerted no positive influence on the outcome of the war.

Despite the urgings of Logan, Frelinghuysen followed the advice of Phelps in delaying the recognition of Iglesias to avoid the dilemma which had arisen in the case of Calderón. In the treaty of Ancón, signed with Iglesias on 20 October 1883, Chile gained all her demands: annexation of Tarapacá; occupation of Tacna-Arica for ten years, a plebiscite to determine its permanent sovereignty; no obligation to honor Peru's indebtedness based on the resources of Tarapacá; and various articles concerning guano. Sustained only by Chilean arms, the government of Iglesias ratified the treaty on 10 March 1884, despite official protests from Europe and unofficial ones by the United States.

Thus ended the War of the Pacific in a manner that completely discredited the ill-starred diplomacy directed from Washington.

SOME CONSIDERATIONS ON UNITED STATES DIPLOMACY

That the diplomacy of the United States in relation to the War of the Pacific was unfortunate in almost every way admits of no serious doubt. By assuming the role of exclusive peacemaker, the successive secretaries of state only prolonged the suffering occasioned by the war, irritated Chile to the point where she would tolerate no interference unbacked by force, and deeply alienated the natural affection of Peru

for the government in Washington. The responsibility of the United States for the protracted struggle was the greater, since European powers would most likely have imposed an early settlement if permitted to do so.

The relative responsibility attributable to the three secretaries of state who dealt with the problem is a controversial issue. It is apparent, in retrospect, that neither the careful policy of Evarts in recognition of the belligerent rights of the contestants, while offering mediation to the exclusion of European powers, nor the cautious efforts of Frelinghuysen on similar lines, had any chance of restoring peace. A balanced judgment on Blaine is more difficult to reach. His conception of a vigorous foreign policy was at variance with the views of both the others. He did not attempt, however, to achieve more than they, except for his proposed Pan American Congress. It is true that Blaine's handling of the claims against Peru militated against the success of his policies, as did his failure to supervise his ministers adequately. But the assassination and lingering death of President Garfield can be cited in extenuation of these failures. Concerning arbitration, no annexation of territory by force, promotion of trade, and respect for other cultures—ideas involved in his advocacy of a Pan American Congress—Blaine was well in advance of his times. Finally, while it cannot be maintained that the special mission would have succeeded under him, his original instructions to Trescott demonstrated that Blaine alone of the three secretaries understood that the employment of no more than the usual polite diplomatic methods would only prove embarrassing to all, accomplishing nothing.

The failure of the diplomacy of the United States cannot be attributed wholly to the ineptitude of its several ministers or to the slowness of communication. The officials at the Department of State often failed to lay down clear-cut policies and to supervise their agents adequately, even when they asked for more explicit direction. Moreover, premature publicity, for which both the ministers and the home government must share the blame, ruined every project to restore peace which had any prospects of success.

ELECTROCARDIOGRAPHIC CHANGES IN RATS ON THIAMINE DEFICIENT DIETS

by LOUIS JOSEPH PECORA*

INTRODUCTION

The work reported here was undertaken to investigate the possibility that rice contains some hitherto unknown substance or property that might protect the cardiovascular system from damage due to hypertension and other cardiovascular diseases. Currently, the influence of diet is receiving considerable attention as an important factor in the relief or control of hypertension and a variety of cardiovascular diseases. There are several dietary approaches in consideration, namely, drastic sodium restriction, low protein intake, drastic food restriction, and combinations of all these.

The rice diet of Kempner (17, 18, 19, 20) has proved to be successful in improving the cardiovascular status of some hypertensive patients. He has reported that about 70 per cent of the patients treated obtained marked benefit. The rationale of the rice diet has not yet received a satisfactory explanation. Several possibilities suggest themselves, namely, the low caloric intake, the low protein content of the rice diet, the low sodium intake, the particular combination of amino acids found in rice, or some hitherto unknown protective substance or property of rice.

The possibility that rice may contain some unknown protective substance or property capable of protecting the cardiovascular system was also suggested by the difference in the electrocardiographic results obtained in beriberi patients by Weiss and Wilkins (33, 34) and Wenckebach (1, 35). Weiss and Wilkins reported well defined alterations in the electrocardiograms of occidental patients with beriberi in Boston, while Wenckebach observed no important electrocardiographic changes in patients with beriberi in Java. The occidental patients were chiefly severe chronic alcoholics with no thiamine intake. The oriental patients presumably subsisted on a staple diet of white polished rice which supplied about fifty gammas of thiamine per hundred grams. If it is presumed that the oriental beriberi resulted chiefly from a polished rice diet, then an hypothesis may be drawn that rice may possess some protective substance or property that benefits the heart.

Since rice is the basis of the Kempner diet, the beneficial influence of the diet may be partially explained by the natural characteristics of rice itself. Rice contains a small amount of sodium, protein, and fat. The Kempner diet recommends a caloric intake of about 2000 per day. It has been shown by other investigators that the several conditions of the

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Kempner diet considered individually can lower the blood pressure in the hypertensive human or animal.

Grollman and Harrison (12) have reported a reduction in blood pressure in hypertensive rats on drastic sodium restrictions. Lenel, Katz, and Rodbard (22), produced hypertension in chickens by adding sodium chloride to the drinking water, resulting in an increase of blood pressure from an average of 132/47 mm Hg to 183/154 mm Hg.

Handler and Bernheim (13) and Dontigny, Hay, Prado, and Selye (10) have observed in hypertensive rats that the blood pressure follows the protein content of the diet, the blood pressure increasing as the protein content of the diet increased and vice-versa.

There is considerable evidence that drastic food restriction also can produce lowering of the blood pressure as shown by Brozek, Chapman, and Keys (5), Terry (30), and Adlersberg, Coler, and Laval (2). Studies of the Leningrad physicians on hypertension, as reported in the Leningrad Medgiz. (24), during the World War II years showed a marked decrease in blood pressure in hypertensive patients on a limited diet during the siege of Leningrad from 1941 to 1942. Similarly, Burger, Sandstead, and Drummond (6) observed striking decreases in blood pressures in Holland during the winter of 1944 and 1945 when the dietary restriction was at its height.

In order to test the hypothesis that rice may possess some unknown protective property, rats were made extremely thiamine deficient as a means of producing severe cardiovascular damage. Several investigators have described pathological lesions in the hearts of various animals on non-rice diets with a severe chronic thiamine deficiency. Ashburn and Lowry (3) have reported definite pathological lesions in the auricles and pulmonary veins of the chronic thiamine deficient rat. The studies of Porto and de Soldati (27) on dogs, and Follis, Miller, Wintrobe, and Stein (11) on hogs have revealed similar lesions in the auricular myocardium associated with chronic thiamine deficiency. Wintrobe, Alcayaga, Humphreys, and Follis (38) found pronounced electrocardiographic changes in the chronic thiamine deficient swine. Hundley, Ashburn, and Sebrell (15), and King and Sebrell (21) likewise reported specific abnormalities in the electrocardiogram of the chronic thiamine deficient rat.

The plan followed in the experiment reported here, was to observe electrocardiographically and pathologically the extent of cardiac damage as influenced by the experimental diets.

METHODS AND MATERIALS

Two rice diets and two casein "synthetic" diets were used. One of each contained adequate thiamine. One casein "synthetic" diet was thiamine free and one rice diet contained only the thiamine supplied by the

polished white rice. The rice diet was composed of ground polished rice (40-60 mesh) 77.9 g, vitamin free casein 12.1 g, cottonseed oil 3 g, cod liver oil 2 g, Osborne and Mendel salt mixture 4 g, and vitamin-starch powder 1 g. The vitamin-starch powder supplied all the known required vitamins for the rat. The casein "synthetic" diet consisted of vitamin free casein 18 g, sucrose 72 g, cottonseed oil 3 g, cod liver oil 2 g, O&M salt mixture 4 g, and vitamin-starch powder 1 g.

Young male albino rats of the Osborne and Mendel strain and the Sprague-Dawley (NIH) strain were used. Electrocardiograms were obtained with a Sanborn electric "Portocardiograf" in conjunction with a Sanborn "Cardioscope" amplifier. The three standard limb leads were used. Special German silver electrodes were devised by the author for use on the rat. As animals developed acute episodes of polyneuropathy (ataxia, spasticity, and convulsions) they were treated with 50 gammas of thiamine and allowed to develop a second and a third deficiency. Those that died and others that were sacrificed, were autopsied and examined histologically.

RESULTS

The contour of the rat's electrocardiogram is essentially like that of the human. The average PR interval is 0.042 ± 0.002 sec., the QRS 0.012 ± 0.001 sec., and the QT 0.050 ± 0.004 sec. in the normal young rat.

The average weight curves of the control animals on both diets were normal. The average weight curves for the animals on both experimental diets were the same up to 150 grams, then dropped to 125 grams. The animals on the experimental rice diet remained at this level to the end of the experiment and the group on the experimental casein "synthetic" diet dropped to an average of 90 grams and stayed at this level to the end of the experiment.

Bradycardia was a cardinal symptom in these thiamine deficient rats. In addition to this, many of the deficient animals showed striking disorders of rhythm. The commonly occurring disorders were sinus arrhythmia with wandering pacemaker of sinus node and auricular ectopic origin, first degree AV block, auricular fibrillation, premature ventricular beats with bigeminy and prolonged QRS and QT intervals. During their first deficiency, six of the nineteen rats on the experimental casein "synthetic" diet had definite disorders of rhythm. Ten animals on the experimental casein "synthetic" diet entered a second deficiency episode and all developed disturbances of rhythm. Seven rats went through a third acute deficiency episode and five had rhythm disturbances.

Five of the twenty rats on the experimental rice diet that went through the first deficiency episode developed alterations of rhythm. Five of the fifteen rats during the second deficiency episode, and three of the nine

rats during the third deficiency episode had definite alterations of rhythm.

The PR interval was prolonged to a certain extent in all cases going through an acute deficiency episode. The group average PR was restored less and less toward normal with each successive deficiency period in the group on the experimental casein "synthetic" diet after thiamine therapy. The average PR interval was restored to normal after each successive deficiency period following thiamine therapy in the group on the experimental rice diet. The incidence of first degree AV block as indicated by an abnormally prolonged PR interval was about the same in both groups.

The group average QRS for both groups of experimental animals remained essentially normal. There was a greater incidence of prolonged QRS intervals in the group on the experimental rice diet than on the experimental casein "synthetic" diet. The QRS changes were similar to the bundle of Kent syndrome in the human.

The QT interval was prolonged about 30 per cent in both groups during the first deficiency and remained at this value to the end of the experiment. The QT value fluctuated irregularly around this new level.

Many variations in the P waves were observed in the tracings taken during the acute thiamine deficiency periods. The variations were similar in both groups. The group average R wave was elevated to approximately double the normal level for both groups during the first acute deficiency episode and remained elevated to the end of the experiment. There were marked irregular T wave variations in the group on the experimental casein "synthetic" diet but none in the rice group. The ST takeoff in the rats on the experimental rice diet showed less deviation from the normal than did the experimental animals on the casein "synthetic" diet.

Other symptoms such as emaciation, anorexia, weakness, decreased body temperature, cyanosis, depressed blood pressure generally accompanied the polyneuritis associated with the acute thiamine deficiency. The average time elapsed for the production of acute thiamine deficiencies in the experimental rats on both diets were about the same. The potassium content of the heart of the thiamine deficient rat was found to be lower than in the normal rat. The sodium was unchanged.

The incidence of pathological changes in the myocardium of rats on the experimental casein "synthetic" diet was about twice that of the rats on the experimental rice diet. Similarly the incidence of both electrocardiographic changes and pathological changes occurring together was greater in the rats on the experimental casein "synthetic" diet than in the rats on the experimental rice diet.

DISCUSSION AND CONCLUSIONS

The experimental results show that the animals on the experimental rice diets maintained a higher weight level than the animals on the

experimental casein "synthetic" diet during the chronic thiamine deficiency period. The rats on the experimental rice diet had less changes in rhythm, PR interval, ST takeoff, and pathology, but had a greater incidence of QRS interval disturbances. All other measurements were essentially alike. However, there was a striking difference in the occurrence and severity of heart pathology. The rats on the experimental rice diet had about half the incidence of pathological changes in comparison to the animals on the experimental casein "synthetic" diet, and the changes in the hearts showing pathology were much less severe.

The results of this experiment show that the cardiovascular system received more protection from the experimental rice diet than from the experimental casein "synthetic" diet. The nature of the results do not permit a positive conclusion as to whether the favorable effects of the experimental rice diet are due to some unknown substance or property of rice or whether the favorable effects are due to the trace of thiamine in the polished rice. This experiment was intentionally designed to produce in the rat severe thiamine deficiency in order to obtain cardiovascular damage of a magnitude that could be followed electrocardiographically and pathologically. Both experimental diets used in this experiment produced a severe thiamine deficiency even though the polished rice did supply about fifty gammas of thiamine per hundred grams. There is the possibility that the thiamine deficiency in this experiment might have been so severe as to obscure some protective effects which might have been evident under milder conditions. The disturbances in cardiac behavior and pathological changes in both groups were similar in character and were differentiated in incidence and severity only by careful measurements and observations.

The lack of electrocardiographic changes noted by Wenckebach (1, 35) in his oriental beriberi patients in Java and the well-defined electrocardiographic changes reported by Weiss and Wilkins (33, 34) on their occidental beriberi patients in Boston may be explained by the difference in diet. The oriental patients subsisted chiefly on a diet of polished rice supplying about fifty gammas of thiamine per hundred grams, while the occidental patients were principally severe chronic alcoholics with no thiamine intake. This situation is comparable to the experiment reported here and in like manner the dissimilarity in results may be explained by the differences in thiamine intake.

It was not desirable or possible in this experiment to simulate the Kempner regimen. Rats did not grow well on an extremely high rice diet and a thiamine deficiency could not be produced in a relatively short time. In addition, the Kempner diet is supplemented with adequate vitamins. Other factors, such as low sodium, protein, and caloric intake known to produce a lowering in blood pressure also obtain in the Kempner rice regimen. These conditions were eliminated in the experi-

mental diets used in this investigation so that only one variable, the rice, could be studied. However, if it had been possible to simulate the Kempner regimen in rats, the results might have been more impressive. Our study does not permit any inference to be made as to what role rice may play in the beneficial influence produced by the Kempner diet. Further experimental studies using different techniques and approaches will be necessary to evaluate the role of rice in the Kempner diet.

SUMMARY

1. The success of the Kempner rice diet in improving the cardiovascular status of some hypertensive patients suggested that rice might contain some hitherto unknown protective substance or property capable of protecting the cardiovascular system from damage due to hypertension and other cardiovascular diseases. This suggestion was further supported by the differences in the electrocardiographic findings reported by Wenckebach in oriental rice eaters with beriberi and Weiss and Wilkins' occidental beriberi patients.
2. Evidence from the literature was presented to show that several features of the Kempner rice diet, when considered individually, are capable of producing a decline in blood pressure.
3. Chronic thiamine deficiency was selected as the method for producing severe cardiovascular disturbances and damage.
4. Two rice diets and two casein "synthetic" diets were used. One of each contained adequate thiamine. One casein "synthetic" diet was thiamine free and one rice diet contained only the trace of thiamine supplied by the polished white rice.
5. Young albino male rats of the Sprague-Dawley (NIH) and Osborne and Mendel strains were used.
6. Animals were allowed to go through an acute thiamine deficiency episode and then treated with thiamine. Some animals went through a second and third deficiency episode. Electrocardiograms were taken several times during the attack and at least once twenty-four hours after thiamine therapy.
7. All the electrocardiograms were obtained with a Sanborn "Porto-cardiograf" in conjunction with a Sanborn "Cardioscope," a combination especially designed for use with rats and other small animals with fast heart rates. Special German silver electrocardiograph contact electrodes were designed by the author for use with rats.
8. Data were presented on the electrocardiograms of the normal young rat and the abnormal rat. The relationship of the component time intervals to the heart rate of the rat was compared to that of the human.
9. Data were presented to show the influence of a high rice diet upon the cardiac behavior of the thiamine deficient rat as determined electrocardiographically and pathologically.

10. Data were presented on the growth changes and heart rate changes occurring simultaneously as the chronic thiamine deficiency progressed. The same observations were made during the acute thiamine deficiency episodes.

11. Striking alterations in rhythm were noted in the electrocardiograms of the animals on both experimental diets. The incidence and severity were less in the animals on the experimental rice diet than on the experimental casein "synthetic" diet.

12. The results showed alterations in the component time intervals in both groups, and the less severe were noted in the group on the experimental rice diet. The results showed similar voltage changes in both groups.

13. Observations were made on blood pressure, body temperature, blood picture, cyanosis, anorexia, and emaciation in the thiamine deficient rat. These observations were interpreted as being similar to those present in any severe illness.

14. The potassium content of the hearts was found to be lower in the thiamine deficient rat than in the normal rat. The sodium remained unchanged.

15. The incidence of pathological changes in the myocardium of the rats on the experimental casein "synthetic" diet was about twice that of the rats on the experimental rice diet. The incidence of electrocardiographic changes associated with the pathological changes was greater in the rats on the experimental casein "synthetic" diet than in the rats on the experimental rice diet.

16. The results of this experiment showed that the cardiovascular system received more protection from the experimental rice diet than from the experimental casein "synthetic" diet. The results do not permit a positive conclusion as to whether the beneficial results are due to the trace of thiamine in the rice or to some unknown protective substance or property.

THE THEORY OF TRIPLE-DIPOLE INTERACTION

by BENJAMIN M. AXILROD*

INTRODUCTION

Among the many problems in the theory of solids that need to be solved are those concerned with explaining the cohesive energy and structure of the class of solids known as van der Waals or molecular crystals. In order to solve such problems it is necessary to understand the forces that act between molecules. The theory of such forces, however, is necessarily an approximate one, since it involves the solution of a many-body problem in quantum mechanics. Hence such a theory may predict the cohesive energy of these solids with an accuracy perhaps no better than about 25 per cent. Since the difference in the cohesive energy for the observed structure of a substance and another possible crystal structure may be very small, for many substances the observed structure, which must be the one with lower cohesive energy, cannot be explained theoretically.

The objectives of this research were: (1) to develop the theory of van der Waals attractions further by applying third-order perturbation theory, (2) to apply the results of this development to the cohesion and structure of some molecular crystals, and (3) to learn how to solve such a problem with the aid of high-speed calculating machines. The last objective was found essential as the research progressed, for it developed that the problem involved the numerical calculation of thousands of terms in a summation, a task unsuited to the ordinary desk calculating machine. A problem of this type had not been solved previously with the high-speed computing machines; hence it was necessary to develop special techniques.

REVIEW OF THEORIES OF MOLECULAR FORCES

The weak forces which exist between atoms and molecules in a gas and which cause the equation of state to deviate from that for the ideal gas are called van der Waals forces. These forces play a part in other physical phenomena such as cohesion in liquids, molecular crystals, and high polymers.

The nature of these forces could be fairly well explained by classical theory for the case of dipolar molecules such as H_2O . The attractive force between such molecules was resolved into two parts. One component was obtained by averaging the interaction of a pair of permanent dipoles over all space orientations with regard for Boltzmann statistics. The other component was obtained by considering the mutual polarizability of polar molecules. An attractive potential proportional

* B.E.E. 1953, M.S. 1954. University of Minnesota: Ph.D. conferred November 11, 1949.

to R^{-6} , where R is the intermolecular distance, was obtained for both components. To explain the attraction in diatomic gases such as H_2 , and in the rare gases, Debye calculated the attraction due to mutual polarizability between a pair of such molecules by assuming the molecules to have quadrupole moments.* The quadrupole moments could not be measured, so Debye calculated them from the energy associated with the internal pressure correction of the van der Waals gas equation. With the development of quantum mechanics the quadrupole explanation was found inadequate for several reasons; for example, the rare gases were spherically symmetrical and had no permanent multipoles.

The development of quantum mechanics led to a reasonably satisfactory explanation of the attraction between neutral molecules such as H_2 , and the rare gases Ne , Ar , Kr , and Xe . The application of second-order perturbation theory to the interaction of two atoms yielded the following approximate formula,

$$(1) \quad W_0' = - \frac{3}{2R^6} \frac{\alpha_1 \alpha_2 \bar{W}(1)\bar{W}(2)}{\bar{W}(1) + \bar{W}(2)},$$

where α_1 and α_2 are the polarizabilities and $\bar{W}(1)$ and $\bar{W}(2)$ are the mean excitation energies of the two atoms.†

The derivation of Eq. (1) is of interest as a similar procedure will be followed for the triple-dipole interaction.

For simplicity consider the interaction of two hydrogen atoms whose nuclei are on the x axis. If the interaction potential is expanded in a Taylor's series in powers of the internuclear distance, one obtains for the dipole-dipole term:

$$(2) \quad V_{dd}(1, 2) = - \frac{e^2}{R^3} (2x_1x_2 - y_1y_2 - z_1z_2),$$

where x_1, y_1 and z_1 , and x_2, y_2 and z_2 are the coordinates of the electrons relative to their respective nuclei.‡

Suppose a system whose unperturbed energy levels are $W_0^0, W_1^0, \dots, W_k^0$, etc. and whose Hamiltonian operator is H^0 . Let the Hamiltonian operator for the perturbed system be H . Then

$$(3) \quad H = H^0 + H'$$

where H' in the present instance is simply the interaction potential. According to perturbation theory it can be shown that the first-, second-,

* P. Debye, *Physik. Z.* 31, 178 (1930).

† Eisenbach and London, *Zeit. f. Physik* 60, 491 (1930).

‡ The same form would result for polyelectronic atoms, except that terms such as x_1x_2 would be replaced by a sum.

and third-order corrections to the unperturbed energies W_k^0 reduce respectively to the following when H is defined by Eq. (3) and $W_k = W_k^0 + W_k' + W_k'' + W_k''' + \dots$.*

$$(4a) \quad W_k' = H_{kk}'$$

$$(4b) \quad W_k'' = - \sum_j \frac{H_{kj}' H_{jk}'}{W_j^0 - W_k^0}$$

$$(4c) \quad W_k''' = \sum_{j \neq k} \sum_{l \neq k} \frac{H_{kl}' H_{lj}' H_{jk}'}{(W_j^0 - W_k^0)(W_l^0 - W_k^0)} + \sum_{j \neq k} \frac{(W_j' - W_k') H_{kj}' H_{jk}'}{(W_j^0 - W_k^0)^2}$$

The quantities H_{jk}' are matrix elements as usually defined, namely, the integral over configuration space of the product of the complex conjugate of the wave function for state j , the perturbation H' , and the wave function for state k .

Now for our case the two atoms are in the ground state, i.e., $k = 0$ in Eq. (4). If the perturbation H' is taken as the dipole-dipole potential V_{dd} , it is found that W_0' vanishes. Consider the second-order energy W_0'' . The matrix elements in the summand of Eq. (4b) are the same as the dipole-moment integrals of optical radiation theory. If one makes use of the properties of these integrals and of the spherical symmetry of the atom, and if the denominators, $W_j^0 - W_0^0$ in Eq. (4b) are replaced by a mean excitation energy, an approximate expression for W_0'' , Eq. (1), is obtained.†

London showed for a number of rare gas and molecular crystals that if the induced dipole-dipole interaction given by Eq. (1) was summed over the crystal lattice, neglecting the repulsive interaction and the higher-pole attractions, values equal to the measured heat of sublimation to within 10 to 20 per cent were obtained.‡ Since the experimental values of the heats of sublimation agree only to within 10 to 20 per cent, London's results agree surprisingly well with experiment in view of his assumptions.§¶

Although the second-order perturbation theory has been developed sufficiently to explain several phenomena, the contribution of the energy associated with third-order perturbation theory to the van der Waals attraction has not been determined.

* Born, Heisenberg, and Jordan, *Zeit. f. Physik* 35, 208 (1925/6).
 † F. Seitz, *Modern Theory of Solids* (McGraw-Hill Book Co., 1940), p. 267.
 ‡ F. London, *Zeit. f. Physik. Chemie* 11B, 223 (1930).
 § F. London, *Trans. Far. Soc.*, 53, 8 (1957).
 ¶ F. Seitz, *Modern Theory of Solids*, p. 398.

DERIVATION OF FORMULA FOR TRIPLE-DIPOLE INTERACTION

The derivation is made for atoms interacting at great distances. As in the case of the dipole-dipole interaction the results will be applicable to molecules if the latter can be treated as centers of force.

Let us restrict ourselves to the case of the interaction of neutral atoms which are in the lowest energy level and assume the latter is non-degenerate. For this case the third-order interaction energy W_0''' is according to Eq. (4c):

$$(5) \quad W_0''' = \sum_{j \neq k \neq 0} \sum_k \frac{H'_{0j} H'_{jk} H'_{k0}}{(W_j^0 - W_0^0)(W_k^0 - W_0^0)}$$

The interaction energy W_0''' is associated with the mutual interaction of three atoms. This will be justified later. The wave function of the unperturbed system is taken as the product of the atomic wave functions; the corresponding energy of the system is the sum of the atomic energies. Now if we proceed in a manner similar to that used for deriving the dipole-dipole interaction with H' equal to the sum of three dipole-dipole potentials of the type given in Eq. (2), we obtain again the one-atom dipole-moment integrals of optical radiation theory. They vanish, according to the Laporte rule,* unless the atomic transitions are between even and odd states, i.e., the parity must change in a dipole transition. If three atoms interact pairwise successively, each atom undergoes two virtual transitions. Its parity changes twice and it can return to the initial state as indicated by Eq. (4c). It can be shown that if the system of atoms consists of say two or four atoms, three transitions of the system involving pairwise interactions will not return each atom to its initial state if each atom interacts with every other atom. For this reason, W_0''' is called the triple-dipole interaction.

For convenience the derivation of the triple-dipole interaction is carried out in two steps. First, the interaction energy for three *collinear* atoms is derived by methods similar to London's;† the result is an approximate equation for this energy in terms of measurable quantities such as the atomic polarizabilities and the ionization energies. Subsequently, the angular dependence is determined for three non-collinear atoms with a simplified atom model.

A. The Triple-Dipole Interaction for Three Collinear Atoms.— Suppose the three atoms are oriented with their nuclei along the x axis. As noted earlier, H' is simply the sum of three dipole-dipole interaction potentials, $V_{aa}(1,2)$, $V_{aa}(2,3)$, and $V_{aa}(1,3)$ with $V_{aa}(1,2)$ given by Eq. (2) and the other potentials being similarly defined.

* E. C. Kemble, *Fundamental Principles of Quantum Mechanics* (McGraw Hill Book Co., 1937, p. 540).

† F. Seitz, *Modern Theory of Solids*, p. 267.

Suppose corresponding to the product $H'_{0j} H'_{jk} H'_{ko}$ a sequence of interactions between, first, atoms 1 and 2, next, between atoms 2 and 3, and, last, between atoms 1 and 3. It is found that, if in the first step atom 1 goes to a P_x state, all excited states are P_x states in the sequence, and similarly for the P_y and P_z states. Hence the summation in Eq. (5) can be separated into three sums, X_n , Y_n , and Z_n , the first over P_x states, the second over P_y states, etc. Owing to the spherical symmetry of the atomic wave functions, there is an equivalence between the dipole-moment integrals that enter into the matrix elements H'_{0j} , etc. As a consequence, X_n , Y_n , and Z_n are essentially the same except for a numerical factor.

The derivation so far has been limited to the sequence in which the pairs of atoms interact as follows: first, atoms 1 and 2, next, atoms 2 and 3, and last, atoms 1 and 3. It is necessary to repeat the calculation for five other P_x sequences in which the three atoms interact in a different order. This is readily done. Now, as in the dipole-dipole derivation of London, we introduce mean atomic excitation energies in place of the energy levels $(W_j^0 - W_0^0)$, $(W_k^0 - W_0^0)$ in Eq. (5). The result for three collinear atoms is:

$$(6) \quad W_0''' = - \frac{3}{R_{12}^3 R_{23}^3 R_{13}^3} \frac{(V_1 + V_2 + V_3) V_1 V_2 V_3 \alpha_1 \alpha_2 \alpha_3}{(V_1 + V_2) (V_2 + V_3) (V_1 + V_3)},$$

where α_1 , α_2 , α_3 are the static polarizabilities and V_1 , V_2 , and V_3 the ionization energies of atoms 1, 2, and 3, respectively, and where R_{ij} is the distance between atoms j and i .

B. The Angular Dependence of the Triple-Dipole Interaction.—To obtain the angular dependence we consider the interaction of three identical atoms using a simplified atom model. Suppose that each atom has one electron and has only two states, one, the lowest, an s state and the other a degenerate p state. Let the distances between the three nuclei be R_{12} , R_{23} , and R_{13} , and let γ_1 , γ_2 , and γ_3 be the angles of the triangle formed by these nuclei with γ_1 the angle included by the sides R_{12} and R_{13} , and with γ_2 and γ_3 defined similarly. The coordinate axes for the electron in each atom referred to its nucleus are chosen as follows. The z axes are perpendicular to the plane of the three nuclei, and the x axis with origin at a given nucleus is chosen to bisect the angle formed by the lines joining that nucleus with the two other nuclei.

We consider a sequence of interactions in which the order of interaction is first, atoms 1 and 2, next, 2 and 3, and last, 3 and 1 or symbolically (1,2; 2,3; 3,1); further let the excited states all be p_x states. When the matrix element H'_{0j} for this case is calculated with H' a sum of dipole-dipole potentials, the resulting equation for H'_{0j} expresses the classical interaction of a dipole of moment M at the nucleus of

atom 1, parallel to the x_1 axis, with an identical dipole at the nucleus of atom 2, parallel to the x_2 axis. The matrix elements H'_{0j} , H'_{jk} , and H'_{k0} can accordingly be written readily for any sequence of excited states. Let us introduce the symbol (xyx) for the product $H'_{0j} H'_{jk} H'_{k0}$ to indicate for the atoms interacting in the order (1,2; 2,3; 3,1) that the excited state of atoms 1, is p_x , of atom 2 is p_y , and of atom 3 is p_x . Let similar symbols indicate H'_{0j} , H'_{jk} , H'_{k0} for the other sequences of excited states. There are a total of nine such products, expressed symbolically, as follows: (xxx) , (xxy) , (xyx) , (xyy) , (yxx) , (yxy) , (yyx) , (yyy) , and (zzz) .

The multiplication and summation of these nine triple-products $H'_{0j} H'_{jk} H'_{k0}$ for the order of interaction (1,2; 2,3; 3,1) is a fairly straightforward but lengthy process.

The following expression is finally obtained for W''_0 for all sequences of interaction:

$$(7) \quad W''_0(1,2;2,3;3,1) = \frac{C_1}{R_{12}^3 R_{23}^3 R_{13}^3} [3 \cos \gamma_1 \cos \gamma_2 \cos \gamma_3 + 1].$$

If all other orders of pairwise interaction are considered, the result is the same except for a constant factor. If we write Eq. (7) for three collinear atoms and compare the result with Eq. (6), we finally obtain for the triple-dipole interaction W'''_0 for any three atoms:

$$(8) \quad W'''_0 \cong \frac{3}{2} \frac{(V_1 + V_2 + V_3) V_1 V_2 V_3 \alpha_1 \alpha_2 \alpha_3 (3 \cos \gamma_1 \cos \gamma_2 \cos \gamma_3 + 1)}{(V_1 + V_2)(V_2 + V_3)(V_1 + V_3) R_{12}^3 R_{23}^3 R_{13}^3}$$

APPLICATIONS OF THE TRIPLE-DIPOLE INTERACTION

To show the magnitude of the triple-dipole interaction relative to other components of the van der Waals attraction let us compare the former with the dipole-dipole interaction of rare gas atoms. Suppose the three atoms form an equilateral triangle with sides of length a . Then it can be shown that the ratio of the triple-dipole to the dipole-dipole interaction for the three atoms taken in pairs ranges from 0.004 to 0.017 for Ne, Ar, Kr, and Xe if the a is assumed to equal the nearest-neighbor distance in the crystal of the element considered. Hence the triple-dipole interaction is relatively small compared to other components of the van der Waals attraction.

An instance where relatively small forces may have an important effect is that of explaining the crystal structure of an element or compound when two or more similar structures are likely. An example of this kind which has not been explained is the crystal structure of the rare gases, neon, argon, krypton, and xenon.*

* Rice and Teller, *The Structure of Matter* (John Wiley and Sons, 1949), pp. 151-153.

These elements pack together like spheres in a face-centered cubic structure. An equally close-packed structure is the hexagonal lattice with axis ratio of 1.633. It is not possible to explain the preference for the face-centered cubic structure on the basis of differences in the dipole-dipole, dipole-quadrupole or higher-pole interactions for the two crystal structures. For each multipole-multipole interaction the difference in the lattice sum is about a ten thousandth of the sum itself.*†

Since the triple-dipole interaction has an angular dependence, it might account for the crystal structure of the rare gases.

SUMMATION OF THE TRIPLE-DIPOLE INTERACTION OVER THE HEXAGONAL CLOSE-PACKED AND THE FACE-CENTERED CUBIC LATTICES

A. Planning and Computation Procedure.—For purposes of summation it is convenient to express the triple-dipole interaction energy of three atoms solely in terms of the lengths of the lines joining the three nuclei. W_0''' is, from Eq. (8),

$$(9) \quad W_0''' = \frac{3/8(a^2 + b^2 - c^2)(a^2 - b^2 + c^2)(-a^2 + b^2 + c^2) + a^2b^2c^2}{r_0^6 a^5 b^4 c^3} (9/16V\alpha^2),$$

with $R_{12} = ar_0$, $R_{13} = br_0$, $R_{23} = cr_0$,

where r_0 is the distance between nearest neighbors.‡ It is convenient to let

$$K = 9/16 \frac{V\alpha^2}{r_0^6}$$

and to then sum W'''/K , a dimensionless quantity dependent only on the geometry of the lattice. The contribution of the triple-dipole interaction energy to the potential energy of an atom in the lattice is then obtained by choosing one atom, say atom 1, as an origin and letting atoms 2 and 3 be successively all pairs of atoms in the lattice.

It was decided to make use of the lattice symmetry and to sum by pairs of atom layers or planes, for brevity called plane-pairs. To carry out the summation of W'''/K according to this plan it is necessary to select a suitable system of vectors to represent the lattices. W'''/K can then be expressed in terms of sets of integers so that the summation becomes purely an algebraic operation. This procedure would be suitable for computing by a desk calculating machine as well as with other digital computers of the automatic type.

To have an adequate estimate of the lattice sum, the summation should extend to 3 or 4 r_0 from the atom at the origin. This would

* Data for the cubic lattice: Lennard-Jones, *Proc. Roy. Soc. A* 107, 616 (1935).
 † Data for the hexagonal lattice: Goepfert-Mayer and Kane, *J. Chem. Physics* 4, 642 (1940).
 ‡ The subscript 0 is omitted on W_0''' henceforth.

require summing about 50,000 terms; the corresponding number of multiplication operations is roughly 1,000,000 multiplications. Such a task is too great for the desk calculator; IBM punched-card machines were therefore selected.

Since the face-centered cubic (f.c.c.) lattice as well as the hexagonal close-packed (h.c.p.) lattice can be generated by stacking layers of hexagonally-arrayed atoms, the choice of a set of base vectors was simple.* Two of these vectors were in the plane of atoms $z = 0$ and were 120° apart; the third vector was perpendicular to this plane. If atoms 2 and 3 are in the m th and n th atom layers above the origin, we speak of these layers as the (m,n) plane pair. The triple-dipole interaction for an atom at the origin and two other atoms was readily derived from Eq. (9) in terms of these vectors.

The region selected for summation was a cylinder with the z axis for its axis and extending 4 layers of atoms above and below the plane $z = 0$; the radius was equal to $\sqrt{10} r_0$.

The numerical computation of the lattice sum of W'''/K required on unusual amount of checking. The reason is that the quantity to be obtained, a single number, is the sum of thousands of positive and negative terms.

B. Results of Computation.—The lattice sum of W'''/K for the cylindrical region of altitude $\sqrt{128/3} r_0$ (corresponding to 9 planes of atoms) and of radius $\sqrt{10} r_0$ was 56.686334 for the f.c.c. lattice and 56.726933 for the h.c.p. lattice. These values, obtained from the sums for the plane-pairs, are accurate to at least five decimal places.

To obtain some idea of the convergence behavior of the lattice sum as the region of summation is extended in the z -direction, the sum of W'''/K for each lattice was determined from the sums for individual plane-pairs for limits for n and m of ± 1 , ± 2 , ± 3 , and ± 4 . The corresponding values obtained for the sum of W'''/K for the f.c.c. lattice are 51.517, 55.880, 56.548, and 56.686; while the corresponding values of the differences between the h.c.p. and f.c.c. lattice sums are 0.0090, 0.0386, 0.0415, and 0.0406. It is noted that the lattice sum is always greater for the h.c.p. structure. From this data the convergence of the lattice sum was examined in a heuristic manner.

It is estimated that the lattice sum for the infinite cubic lattice is between 56.69 and 57.3 and that the difference in the lattice sums for the hexagonal and the cubic lattices is of the order of 0.04.

C. The Contribution of the Triple-Dipole Interaction to the Cohesion in Crystals of the Rare Gases.—The calculated values of the triple-dipole interaction, W''' , per mole for crystals of the rare gases

* Rice and Teller, *The Structure of Matter*, pp. 131-132.

are shown in Table AIII-1 together with the experimental cohesive energy or heat of sublimation.

The magnitude of the triple-dipole interaction is 2 to 9 per cent of the cohesive energy for the rare gases, and it should be noted as being a repulsion. The difference in the lattice sums of W''' for the hexagonal close-packed and face-centered cubic lattices is of the order of 0.01 per cent of the cohesive energy and favors the f.c.c. lattice. This difference, however, is too small to explain the crystal structure of the rare gas solids.

How can the crystal structure of the rare gases be explained? One possibility is non-additivity in the van der Waals repulsion. Another possible explanation is a non-additivity arising from interaction between the van der Waals repulsion and the van der Waals attraction, i.e., deformation of the electronic charge cloud resulting from the van der Waals repulsion alters the van der Waals (dipole-dipole, etc.) attraction and vice versa. A third possibility, at least for the elements of low atomic weight, is a difference in the zero-point energy for the two closest-packed crystal structures.*

TABLE AIII-1
THE TRIPLE-DIPOLE INTERACTION FOR SOME MOLECULAR CRYSTALS

Element	$\frac{V\alpha^2}{r_0^9}$ ^{a, b, c}	W''' per mol (Repulsive Interaction) ^d		Heat of Sublimation ^e	
				ΔH	Temperature
				kilocal per mol	°K
Ne	10^{-16} erg	10^9 erg	kilocal	0.51	24.6
Ar	0.587	0.376	0.009	1.86	84
Kr	6.08	3.89	0.093	2.57	116
Xe	14.95	9.57	0.229	3.59	161
	21.88	14.01	0.335		

^a Values of V from Hubbard and Meggers, *Key to the Periodic Chart of Atoms* (W. M. Welch Scientific Co., 1947).

^b Values of r_0 taken from J. C. Slater, *Introduction to Chemical Physics* (McGraw Hill Book Co., 1939), pp. 416-7.

^c The values of α are averages of values listed in *Handbuch d. Physik*, second ed., 24/2, 942.

* V. Dietz, *J. Chem. Physics*, 2, 206 (1934).

$${}^{\circ}W''' \text{ per mol} = \frac{N_0}{3} \left[\sum_{\text{lattice}} \frac{W'''}{K} \right] K, \text{ where } K = \frac{9}{16} \frac{V \alpha^3}{r_0^3} \text{ and } N_0 = 6.024 \times 10^{23}.$$

* Data derived from values of heats of fusion and vaporization given in *Selected Values of Thermodynamic Properties*, Series II (1947), prepared and distributed by the National Bureau of Standards, Washington, D. C.

SUMMARY

The contribution of the energy associated with third-order perturbation theory to van der Waals attractions between atoms was determined for the dipole-dipole part of the interaction potential. The resulting energy corresponds to an interaction between three atoms; hence it is called the triple-dipole interaction. The results also apply to molecules if the latter can be considered as centers of force, i.e., compact molecules whose separation is large compared to molecular dimensions.

The triple-dipole interaction depends on the configuration of the triplet of atoms, being positive (repulsive) for all acute triangles and negative (attractive) for most obtuse triangles.

Because of its dependence on the triplet configuration, the triple-dipole interaction was applied to the problem of the crystal structure of the rare gases. The latter elements crystallize in the face-centered-cubic lattice. The latter is one of two equally close-packed structures, the other being the hexagonal close-packed lattice. The triple-dipole interaction was summed for each of these lattices, the region of summation in each case being a cylinder whose dimensions were about six times the nearest-neighbor distance. The summing involved extensive numerical calculations which were performed on IBM punched-card machines. Since a similar problem had not been handled with these machines heretofore, the computing procedures had to be developed.

The results of the calculations are as follows: The lattice sum of the triple-dipole interaction is about 2 to 9 per cent of the cohesive energy for crystals of neon, argon, krypton, and xenon. The difference in the two lattice sums is of the order of 0.1 per cent of the sum itself and favors the actual structure, namely, the face-centered cubic lattice. However, since the difference in the lattice sums of the triple-dipole interaction is only of the order of 0.01 per cent of the cohesive energy, it is concluded that this interaction cannot account for the crystal structure of the rare gases.

THE GROWTH OF NATIONALISM IN AMERICAN LITERATURE, 1800 TO 1815

by JAMES HAROLD COBERLY*

Nationalism is a political or social philosophy that places the good of the nation above all other considerations. A product of the modern world and most noticeably influential in political thinking since the French Revolution, it has been a matter of great concern to statesmen and political philosophers and increasingly a subject for scholarly investigation. One characteristic of this phenomenon has been especially marked—its pertinacity. As a concept of man in society it is based in great part on natural emotional and psychological tendencies that give it an insinuating and pervasive power. Attachment to place, to kind, and to a name—or to a symbol for any of them—is so natural a predilection and so easily extended by the nationalist to embrace the idea of an integrated national life that the process of nationalization now seems to have been inevitable and, so far, appears impossible to stop and even difficult to control. Historians have traced its continuity in the political and economic affairs of America since the Declaration of Independence. But the nationalist does not stop with politics and economics; the national life must also be culturally integrated. It is this aspect of nationalism that has not yet been completely and comprehensively studied.

Enough scholarly work has been produced to demonstrate that literary nationalism at certain times accompanied political and economic nationalism. Cairns' early studies set 1815 as the date for the beginning of an American literature distinguishable as American; although without the terminology and paraphernalia of later students of nationalism his work revealed that a nationalizing process was or had been effective in literature. The more recent studies of McCloskey, Spiller, Spencer, and Clark have made explicit the factor of nationalism in our literature since the War of 1812. But Cole's doctoral dissertation on the beginnings of literary nationalism revealed an enormous amount of nationalistic thought and expression during the first twenty-five years of our national existence, 1775-1800. The logical premise, therefore, was that literary nationalism continued in the years from 1800 to 1815. The present study thus carries on the program of work in nationalism formulated and directed by Bolwell at The George Washington University. Still other investigators in the field of literary and cultural nationalism have made such sound contributions that the importance of this aspect of literary history to a complete understanding of American cultural history is not challenged. Most of these are more widely ranging studies of cultural matters: Curti on education, Mencken on language, Curti and Gabriel

* A.B. 1933, A.M. 1938, The George Washington University; Ph.D. conferred November 11, 1949.

on American thought, Schneider on American philosophy, Hayes and Kohn on nationalism, Warfel's work on Noah Webster. There are others, but all of them deal with men and ideas and movements that both precede and continue beyond the early years of the nineteenth century. A more detailed examination, limited to the literature of the years 1800-1815, was undertaken in order to add a second period to a history of American literary nationalism. The four categories of the subject, which Bolwell proposed and Cole found practicable, were again used:

I. Writings concerning Nationalism

II. Writings concerning the Theme of a National Literature and a National Culture

III. Nationalistic Literary Exploitation of American Themes

IV. Cultural Features with Nationalistic Implications.

The first comprises the topic of nationalism itself: the philosophical statement and enunciation of principles. The second division is a consequence of the first: the extension of nationalism into cultural areas and the demand for a national literature to further the cultural integration of the nation. The third collects and sorts the responses to the demand made in the second. The fourth category includes the evidence of nationalism in cultural areas that are related to or that impinge upon literature; it is, in a sense, a supplement to the second category. Because the topic of this study was literary nationalism, neither the total amount nor the complete effect of nationalism was contemplated. Several sources of material such as letters and newspapers, and several areas of thought such as the political and scientific, were intentionally excluded in order to keep the study within the reasonable bounds of periodicals and printed discourses mainly devoted to cultural matters and of volumes of verse, fiction, drama, and essays. The bibliography includes those items that had material bearing upon the topic of nationalism. Perhaps as many more volumes were read and discarded because they contained nothing either pro or con on the subject. No claim is therefore advanced that nationalism was the greatest determining factor in American literature during these first fifteen years of the nineteenth century. The mass of evidence assembled does however indicate that nationalism was one of the considerable forces in American thought.

The period is not remembered for great literary achievement, although a few names retain their place in our cultural history. Freneau and Charles Brockden Brown, Noah Webster, Joel Barlow, and William Dunlap, lived into and through the period and continued their writing. Irving and Bryant began theirs, Irving's *Knickerbocker's History* being the most distinguished and lasting creation. Students and literary historians know of James Kirke Paulding, William Austin, William Ellery Channing, William Wirt, Charles Jared Ingersoll, Timothy

Dwight, and Joseph Dennie, but all, with the exception of Dennie have as great, if not greater, importance outside literature. *Salmagundi* is recalled because of Irving, possibly the *Port Folio* because of Dennie; but few read or remember the Boston magazine, the *Monthly Anthology*, or its numerous contemporaries.

But nationalism implies and connotes totality, the complete integration of all heterogeneous elements into a supreme national whole. It is the degree of success in the attainment of that ideal which has made nationalism so much hated and feared in the twentieth century. Consequently, in the study of this political philosophy, particularly of its penetration into and effect upon literature, it is necessary to look at a great deal of writing, not to confine investigation to the best that has been spoken and written. "Yankee Doodle" reached a hundred persons to the one affected by the occasionally good verse of John Blair Linn. Fourth of July orators reached thousands directly and by way of their printed speeches; the polite essay on taste in the *Monthly Anthology* circulated not much beyond a small group in Boston and Cambridge. A further justification for this research has been the collecting and the sorting and the putting together of materials that have not previously been treated in literary history and that must be treated if the story of literary nationalism is to be complete.

Historically the years were interesting, at least in retrospect. A peaceable sort of revolution was effected in politics, and the squabbling of the ins and outs was carried into the literature. The invective was coarse sometimes but it was virile. The oratorical periods were often classical and full-throated. But it was the thinking that lay behind the public utterance that was vital and is still pertinent. For between the Jeffersonians and the Federalists was being argued the meaning of America, the meaning of democracy and republicanism, the meaning of this new concept of a new man in a revolutionary social and political order. No conclusions were reached, but through the controversy and through the events of those years—war with Tripolitan pirates, purchase of Louisiana, international diablerie, non-intercourse and embargo laws, Napoleonic wars, and another war between England and the United States—the American people were drawn to more concerted thought and action so that in 1815 the nation could feel that it had reached manhood.

The nation was stronger. One of the happiest results of the War of 1812 was the dispersal of a serious factional threat to national unity. When the Essex Junto failed, an arbitrary concept of government was not imposed upon the people. Nationalism was in some measure responsible; not solely political or economic nationalism, because the nationalism of the New England Federalists was as strong as, certainly more totalitarian than, that of Jefferson and Madison. It might be said that one brand prevailed over another. Another factor must have been the

state of mind that the nationalist had been constantly nurturing since the winning of independence from England. In 1783 there was a nation. The components of nationality were also there: a prevailing common language and religion, a dominant racial stock, a heritage of combined action in colonization and in war, and an ideal. But the components were not fused into national unity, and it is noteworthy that the dominant stock with the prevailing language did not forcefully attempt a fusion by subordinating or eliminating other potential nationalities who spoke other languages and held divergent religious beliefs but who had participated in the American experience and shared the same ideal. The process was benevolent and humanitarian as befitted the ideal. Something happened, Crèvecoeur had said, when a man emigrated from Europe. He took a new coloring, a new tone; he became different—he was no longer English, French, Scotch, or German, but American. That was the line of the nationalist. In the virgin wilderness of North America radical social and political thinking had resulted in a new kind of government, sanctioned by God and destined to be the hope of the world. This was unique. The people filling up this realm ought to be as distinctively New World as their Constitution. If there is a distinct American nationality today, it may in great part be the result of certain inevitable natural and social processes, but the nationalist of the early years was in a hurry. He wanted to hasten cultural and social homogeneity as necessary bulwarks to a strong political union; they were in fact interdependent.

The terms of the nationalistic ideology were well established by 1800. The government was a federal structure erected upon democratic, republican principles, but the national ideal was to be paramount to sectional interests and the claims of faction. Cultural homogeneity would increase centralization of power in the national government; it would also stimulate artistic activity that in turn would advertise the success of the American experiment, and by promulgating American ideas fulfill the American mission of being a democratic refuge from feudal Europe. Cultural features such as language and education were a part of the program.

In 1800 the nation was emotionally united in mourning the death of Washington. The election of Jefferson was strenuously contested, but his pronouncement that all were republicans, all federalists, allayed for a time the fear of serious party discord. When it did occur, politics cut across nationalistic lines. Those above or outside the disputes of the political parties inveighed against all factions. That was perhaps the most consistent, if not the most vociferously expressed, attitude found in the periodicals and the orations. The Federalist "outs" attacked the administrations of Jefferson and Madison for their weakness, and through the press and the pulpit advocated measures that were in line

with the total nationalism of Hamilton. Despite the attacks, Jefferson and his party remained in power and, willingly or not, adopted more and more the philosophy of nationalism. The American fleet was sent against Mediterranean pirates, and nationalists hailed its success as a guarantee that the United States could protect its commerce. The acquisition of Louisiana was the first great act to result from the peculiarly American concept of manifest destiny, a concept that was to become one of the most prominent features of nationalism in the later nineteenth century. Here was territory enough for future expansion; too much a few people said, but an optimistic, even grandiose, view of the future was a marked quality among the Americans. In a few years the young War Hawk group in Congress pushed forward a claim to Canada; the slogan "America for the Americans" was becoming a fixture in national thinking. No threat of European influence should be tolerated on the North American continent. Much was made of the geographical position of the United States; isolated from Europe by the Atlantic Ocean, it could promote an autochthonous society and ward off contamination from degenerate, aristocratical governments. "No foreign entanglements" remained the slogan of international policy. Attempts to preserve neutrality by non-intercourse and embargo acts were well-nigh disastrous to the national economy, and by bringing to a climax New England dissension, almost fatal to the union. The disruption of commerce and eventual war with England did promote the growth of native manufacturing, however; and Niles' *Weekly Register* of Baltimore in 1811 took the lead in propagandizing for economic self-sufficiency. The events of the War—the early naval success, the burning of the capital, Jackson's victory at New Orleans—were turned to nationalistic profit. The wave of nationalistic feeling that swept the nation in 1815 was the strongest since the achievement of independence.

While speakers and writers were propagating the doctrines of nationalism, efforts were continued to make the nation culturally respectable and independent. There was general agreement on the desirability of an American literature; there was considerable disagreement on what that literature was or should be. Politics sometimes determined whether support was given to or withheld from obviously American creations, and roughly the Jeffersonians were opposed to the Federalists in literary matters. The traditionalist, the conservative, the Anglophile in Philadelphia was most frequently a Federalist in politics—Dennie in Philadelphia and the Monthly Anthology Club in Boston, for example. Joel Barlow and James Kirke Paulding will serve for the opposition. Thomas Green Fessenden, Robert Walsh, and Noah Webster stand somewhere in between. There was never a meeting of minds on more than a few points, the only consistent one being that books should be written and published in America. The traditionalist's standard of taste and excel-

lence was the classicism of the eighteenth century and the sublimity of Milton. By insisting that American writers approximate this standard he probably discouraged some youthful writers, but the periodicals with which he was identified were remarkably open to American poets. The more independent element desired something more, or completely, distinct from the English, but it was either uncertain as to the degree of innovation or incapable of effecting it. An epic poem to complement the grandeur of the Constitution did not materialize, even though Barlow tried again by revising the *Vision of Columbus*. The manner of narrative and depiction showed little change. There was scarcely anything new achieved in the way of form: rhymed couplets predominated in poetry; five-act dramas, copies of European fictional patterns, the formal classical oratory, persisted.

In the several analyses of the condition of American literature and of the causes for its unsatisfactory achievement, the newness of the country was usually cited. Americans had been occupied with forests and Indians, and then with the formation of a government. Youthful in the political sense, they had separated themselves from their English heritage and because of the pressure of practical affairs had devoted no time to literature. The lack of tradition was keenly felt. There was neither governmental nor private patronage. Schools, libraries, and museums were lacking in number and quality. Americans were so intent upon making money that they paid no attention to artistic endeavor. Many would-be artists bemoaned the absence of coffee-house gatherings and literary salons where discussion and association would stimulate activity. It is true that when a coterie of some sort existed literary production was the result: Dennie and his circle, in Philadelphia; Charles Brockden Brown with William Dunlap and Elihu Smith, in New York; the Anthology Club, in Boston.

The replies to these findings and these queries were varied. As concerned taste and decorum, one group said that youthful America must mature by striving for an English standard. The more pronounced nationalists countered with the statement that Americans wrote and spoke as correctly as Englishmen and they adduced as evidence the political writings of the Revolutionary and Constitutional periods and American oratory. The nationalist's answer to the complaint about tradition was to find it in the American past or to create it. In a sense this was necessary if literature was truthfully to reflect America. Of course the body of world literature was accessible, and the poet or dramatist could rework familiar materials. But feudal, aristocratic, monarchical Europe was the antithesis of the free, democratic, republican New World. More and more the nationalist insisted upon and literary men acquiesced in using the American scene. The historians and the societies for the collection of Americana helped. The voyages of dis-

covery, the settlements, the Indians, the leaders and the wars, the making of the Constitution, were stressed as proper literary materials and were more often accorded artistic treatment. Attention was directed to contemporary, near-at-hand scenery, the rivers and mountains and other physical endowments that had all the elementary qualities of like features in Europe, but had also a greater grandeur and sublimity and were distinctly American. Patronage was an aristocratic relic. American writers should be protected by a law of copyright and an impost on imported books. Critics should encourage native writers; the public should support them by buying their books. There were more schools in America than in England and the American people were on the whole better educated than the English, the nationalist said. But there could not be too many schools, and libraries and museums were needed. The over-all effect of such discussion was that it kept alive the subject of an American literature and the wish to create it.

The most interesting and original literary phenomenon in the years after 1800 was the "Paper War" with England. It was the most important feature in the program of creating a distinctive American literature. Provincially sensitive to any criticism, the American was stung by the false reports compiled by foreign travelers. When these accounts were accepted as true and used as the basis of critical attacks by English essayists, he was doubly outraged. The English were further provoked by the satiric retaliations of Royall Tyler, James Kirke Paulding and Jared Ingersoll. The reception the English reviewers gave Ingersoll's *Inchiquin the Jesuits' Letters* brought the critical warfare to high tension at about the same time that a similar stage was reached in the shooting war with England. The replies made by Niles, Paulding, and Timothy Dwight to the English reviewers furnished the strongest evidence that nationalism was as forcefully active in cultural matters as in political. The literary war was not concluded with the War of 1812—Sidney Smith, Mrs. Trollope, Charles Dickens, Emerson, Whitman, and Lowell were yet to make their contributions—but the year 1815 ended on a high note of literary nationalism. The Americans had put themselves in a position where they were forced to produce further justification for their claims. Paulding's statement in particular amounted to a cultural declaration of independence—before Emerson. To what extent the literary production of the 1820's and 1830's was a result of this literary war it is probably impossible to determine. Truly American literature did begin to appear almost at the moment when Sidney Smith was making his famous charge.

The response to the nationalist's demand for a native American literature was large in quantity if not high in quality. It is noticeable that more books appeared bearing the label "an American play," "by an American," "a scene from American history." More novels and dramas

were set in America. American scenery figured more prominently. Niagara Falls, the Hudson and the Potomac, the Alleghenies and the Catskills found their way into poetry and prose. Often the writer pointed out the uniqueness of these physical features and at other times descanted upon the salubrity of the climate and the fertility of the soil. The characters of fiction were given American attributes: the men were ingenious, hardy, freedom-loving; the women virtuous and sensible. Types such as the Yankee and the Revolutionary patriot appeared more frequently. Characters were made to express American sentiments; sometimes foreign personages in a foreign setting expressed the ideals of the American revolution and the glories of democracy. The state of American civilization—its progress, its industry, its towns, and its refinement—was, like the theme of the American Government, a favorite topic for the public orator. Everything that could be praised was given full measure; the future would take care of all deficiencies. America was the Athens and the Rome of the New World. The government was the grandest ever inspired by God and conceived by man. It represented a new order of liberty and equality, the hope of the enslaved of Europe. In the search for materials, writers heeded the advice of the nationalist and found in the records of exploration and colonization, in the accounts of pioneer skirmishes with the Indians, in the events of the French and Indian and the Revolutionary Wars more than he immediately availed himself of. Particularly in fiction and drama the personages and events of the American past became more prominent. Pocahontas and Andre took their places in the growing body of native legend, alongside the more heroic figures of Washington and his military aides. Heroes from the Tripolitan War and from the War of 1812 were quickly worked into national expression. The roll-call of illustrious men was always a feature of the Fourth of July oration. Finally, the concept of America's destiny was held up as the spiritual goal of the American nation and its people. Blessed and sanctioned by God, America had been entrusted with the high mission of formulating and then preserving a new idea of man in society. It was to be an asylum for the oppressed and a beacon of liberty lighting up the entire world. Most of the men and their works are forgotten, but their attempts to supply an indigenous literature were necessary preliminaries to any later, greater expression.

In certain cultural areas allied to literature nationalism also left its mark. The nationalist had realized the advisability of a national system of education that would train the members of a democratic order to assume their responsibilities in that order and that would inculcate in the minds of the young ideas and ideals proper to the American republic. Before 1800 several proposals for such a national system had been made, and agitation continued throughout the years from 1800 to 1815. A

system supported by and under the control of the national government was not achieved; a national university, although establishment of one was strongly advocated, was declared not within the powers delegated to the federal government. But the nationalist continued his insistence that schools teach their students American principles. The errors of aristocratical, monarchical governments were to be pointed out. Schools and colleges should be staffed by American teachers. Young men should not be sent abroad for educational purposes. Textbooks of grammar, spelling, history, and geography were compiled with generous doses of American precept and illustrative incidents from American history.

Prominent in the field of education as teacher and writer of books, Noah Webster was also the leading figure in the nationalizing of language. His first dictionary together with his many utterances on the subject of language was, as Warfel and Mencken have shown, not only a potent factor in the creation of a distinctive American language but also tangible evidence of a linguistic change. He was attacked by the adherents to Johnson's dictionary, but as Paulding declared and as others echoed, the war of independence had given us the right to do what we pleased with the English language.

The interest in cultural societies and in organizations for the collection of Americana persisted. As has been shown their meetings stimulated literary discussion and helped along the cause of American letters. In collecting the documents and preserving the mementos of the American past, the museums and the historical societies were making the American people aware of their heritage and supplying materials for the creator of story and drama. All in all this cultural activity evinced the efforts of the nationalist to create an integrated culture and supplemented his demand for a national literature.

It can be argued, or at least suggested, that the years from 1800 to 1815 were a period of preparation in literary affairs. Two major American writers did their first work before 1815. Several lesser men also made their first appearance. Many of the later great writers of the early nineteenth century were born during these years. If no masterpieces came into being, considerable talent was evident—and a great deal of literary activity, more proportionately than in the twenty-five years preceding. After an examination of the literary periodicals, a great number of orations and sermons, practically all of the volumes of poetry, fiction, and drama, the fact that nationalism was a very considerable factor in this literary expression is certain. When cognizance is taken of the demonstrated literary nationalism in the first years of the nation, 1775-1800, and later, after the War of 1812, the evidence accumulated by the present research warrants the conclusion that there was no hiatus in literary nationalism between 1800 and 1815 but rather that it was a continuous, persistent force.

FUNCTIONAL ACTIVITY OF THE ZONES OF THE ADRENAL CORTEX AS INDICATED BY STEROID AND ASCORBIC ACID HISTOCHEMISTRY

by HABEEB BACCHUS*

Much physiological evidence has accumulated to the effect that the anterior pituitary is not directly involved in the vital function (salt-water metabolism) of the cortex (Swann, 1940). On the other hand, evidence has accumulated to the effect that the anterior pituitary is necessary in controlling the gluconeogenic function of the cortex.

Morphological, histological, and histochemical evidence indicate that the glomerular zone is not under the control of the anterior pituitary, but that the inner zones are under such control through ACTH.

Chemical evidence has shown that ACTH produces very characteristic responses on the adrenal cholesterol and ascorbic acid contents. Several non-specific stresses imitate the pattern caused by ACTH. These methods do not supply information on the activity of the separate zones of the cortex following these stresses.

In order to investigate the effect of various stresses on the zones of the adrenal cortex, use was made of weight measurements, histological, histochemical, and cytochemical studies of the adrenal gland. Weight measurements are assumed to be indicative of the size of the gland.

The histochemical and cytochemical methods consisted of detection of steroids and of ascorbic acid in the cortex. As Dempsey stated, histochemical study permits the precise localization of substances in tissues and even in individual cells. In this way it is superior to purely chemical techniques. It is, at the present time, only a qualitative method, but much information can be gained from this type of study.

The following methods were used for detection of steroids. It is important that the whole battery of methods be used (Dempsey and Bassett, 1943), since compounds of no other type have been shown to give positive reactions with all these tests.

1. The Sudan Staining Method. This method indicates the presence of steroids and triglycerides and is, therefore, not specific for steroids. This staining property is dependent on the physical property of solubility of Sudan dyes in lipids, not upon a chemical reaction.

2. The Plasmal Reaction. This reaction indicates the presence of acetals of fatty acids bound with colamine glycerophosphate. The reaction involves the conversion of leuco-fuchsin base (Schiff's reagent) to acid giving a purplish coloration.

3. The Phenylhydrazine Reaction. This reaction was believed to be

* B.S., 1947, Howard University; M.S., 1948, The George Washington University; Ph.D. conferred February 22, 1950.

specific for corticosterones. The steroid specificity of this reaction has been questioned by Bennett (1940), Gomori (1942), and Albert and Leblond (1946). Tissues immersed in phenylhydrazine salts are expected to give a yellow coloration.

4. The Schultz Reaction. This reaction is an application of the original Lieberman-Burchardt reaction for sterols. Everett (1947) stated that the reaction is limited to diols formed from cholesterol by mild oxidation procedures.

5. The Acetone Solubility Test. Steroids are known to be soluble in acetone. This test was used negatively to evaluate the above tests.

Adrenal tissue was fixed in 10 per cent formalin for 24 hours, washed in tap water for a short period, placed in a phenolated gelatin solution for about 30 hours, then imbedded in 25 per cent gelatin. Gelatin blocks containing tissues were stored indefinitely in 10 per cent formalin. Frozen sections from 15 to 25 micra thick were cut from these blocks and affixed to glass slides following the method proposed by Zwemer (1933). Sections were treated according to the procedures described above.

For the detection of ascorbic acid, the reducing property of the vitamin in an acid medium was used. Adrenals, immediately after excision from the animals, were placed in an acidified silver nitrate solution for one to one and one-half hours in a dark vial at a temperature of 37° C. Excess silver nitrate was washed off with distilled water. The silver in the tissue was "fixed" by placing sodium thiosulfate in the vial for one to one and one-half hours. The tissues were dehydrated in dioxan and imbedded in paraffin blocks from which microtome sections were cut 7 to 8 micra thick. These sections were placed on glass slides, which were cleared in xylene or stained with hematoxylin and eosin or with carmalum.

Rats of the Sprague-Dawley strain were the experimental animals in this investigation. They were submitted to short-term and long-term stresses. The six "unities" were observed in all designs.

The short-term stresses consisted of single injections of epinephrine, 2.5 per cent NaCl, and DOCA, and submission of the animals to a temperature of from 0° to 4° C.

The long-term stresses were: complete starvation for a period of from 2 to 5 days, prolonged "flooding" with NaCl (2.5 per cent) for 8, 15, and 30 days, prolonged "flooding" with KCl (2.5 per cent) for similar periods, prolonged injections of epinephrine (2 per day), and DOCA (1 per day) for 30 days.

At the end of experimental periods animals were anesthetized with evipal. The adrenals were excised, weighed, and treated for histological examination. One adrenal was used for steroid detection and the other for ascorbic acid detection.

Data were presented to indicate:

1. Sudden stresses cause no striking changes in adrenal weight.
2. Depletion of steroids from the inner zones of the cortex occurs after exposure of the animal to sudden stress.
3. The reticular zone is the first zone to be depleted of its steroids when the animal is under a sudden stress.
4. The fascicular zone is depleted of its steroids if the sudden stress is powerful, e.g., exposure to a temperature of from 0° to 4° C.
5. The glomerular zone is not appreciably affected when the animal is submitted to sudden stress.
6. The marked increase in adrenal weight after the animal is submitted to long-term stress indicates hypertrophy of the adrenal.
7. The hypertrophy noted above is due to widening of the fascicular zone.
8. The adrenals suffer a weight decrease after the animal is submitted to the long-term stress of DOCA.
9. The weight decrease noted above is due to glomerular zone atrophy.
10. The adrenals undergo an increase in weight when the animals are flooded with sodium chloride.
11. The glomerular zone undergoes structural and functional atrophy after the animals are flooded with NaCl for periods of more than fifteen days.
12. The glomerular zone undergoes hypertrophy (and possibly hyperplasia) when the animals are flooded with KCl for prolonged periods.
13. The inner zones of the cortex are not markedly affected by DOCA, NaCl, or KCl stresses.
14. Ascorbic acid present in the cells of a normal adrenal cortex is evenly distributed in the cytoplasm of some cells and is peripherally aggregated under the cell membrane in some cells.
15. Whenever depletion of steroids from any zone occurs to any extent, the ascorbic acid assumes the peripheral aggregation in almost all cells of the affected zone.
16. In an atrophied zone the ascorbic acid is in the form of large clumps.

These data justify the conclusion that ascorbic acid is probably intimately involved in the dynamics of steroid hormone production.

In this investigation the entire course of the General Adaptation Syndrome was observed. Depletion of steroids from the inner cells occurs in the adrenal of an animal submitted to the sudden stress of epinephrine. It is well to note, however, that the cells are of normal sizes. This occurrence is characteristic of the alarm reaction.

Associated with this depletion of steroids in the alarm reaction, ascorbic acid undergoes some change in cytoplasmic distribution. Depending on the severity of the stress, the ascorbic acid may show complete peripheral

aggregation, or many leave the cells altogether. The state of the cells in the alarm reaction is shown in Plate I.

In the adrenal of an animal submitted to epinephrine stress for 8 days, there occurs a widening of the fascicular zone. The inner area of this zone and the reticular zone are completely depleted of steroids. The outer fascicular zone has the normal content of steroids. All cells in the zone show a peripheral aggregation of ascorbic acid. In the inner area much of the ascorbic acid has left the cells. The state of the outer fascicular zone cells is characteristic of the resistance phase of the General Adaptation Syndrome. The inner cells are about to be exhausted. These two conditions are also represented in Plate I.

In the adrenal of an animal submitted to epinephrine stress for 15 days, the fascicular and reticular zones are almost completely depleted of steroids. Most of the cells of the inner areas appear as shown in Plate I ("Exhaustion Phase"). The glomerular zone is not affected by those stresses.

These findings indicate that there is a very intimate involvement of ascorbic acid in the secretion of steroid hormones by the cortex. These findings should throw some light on the relationships described by Long (1947) and Sayers (1948).

The non-involvement of the glomerular zone in conditions involving the fascicular zone and the non-involvement of the fascicular zone in conditions involving the glomerular zone are very striking. This investigation indicates that there is probably some functional significance to the morphological zonation of the cortex. The glomerular zone is more directly involved in mineral balance in the body, whereas, the inner zones are more directly involved in gluconeogenic activity. The implication is that the glomerular zone secretes the "salt-water" hormones, whereas, the inner zones secrete the gluconeogenic hormones.

ELECTRON OPTICAL EXPLORATION OF SPACE CHARGE IN A CUT-OFF MAGNETRON

by DANIEL LOUIS REVERDIN •

It has been recognized that the physical conditions inside a magnetron cannot be deduced from external measurements. A suitable probe has to be introduced into the magnetron. The only direct measurement inside a magnetron is reported by Engbert. It consists of inserting into the magnetron a thin tungsten wire probe. It is possible to measure by that method the potential distribution in the tube, but the very critical symmetry of the system may be disturbed. An electron beam is the most convenient probe for the measurement of the unknown space charge field distribution in a magnetron.

Theoretically, the problem has been investigated by numerous workers. Unfortunately, due to the formidable mathematics involved, no exact solution can be obtained. The various simplifications lead to divergent results. The classical theory of Hull further developed by Brillouin and Megaw predicts that the space charge density under cut-off conditions is approximately constant out to the well defined cloud radius. There exist different hypotheses concerning the motion of the electrons constituting this space charge cloud. Both single stream and double stream of electrons have been postulated. Megaw suggests a double stream while Hull and Brillouin suggest that a single stream of electrons form a rotating core of electrons around the cathode. A third theory has been outlined by Gabor, but as yet is incomplete. These theories are discussed and compared with more recent theoretical and experimental investigations. There is a great need for further direct experimental verification.

In this work the main effort is directed toward the experimental measurement of the electric field distribution and on the deduction of the space charge distribution in a cut-off magnetron. Since no method known to us gave the complete answer to the question, the first objective is the development of a convenient method for such a study. An electron optical method for the mapping of otherwise inaccessible electromagnetic fields, called the electron optical shadow method, has been developed at the same laboratory where the present work was carried out. The method has been slightly modified for the exploration of the electric field distribution inside a magnetron. The magnetron was investigated by sending an electron beam axially through the magnetron as a probe. The experiments are carried out in a specially designed elongated cathode ray tube. The main physical components are an electron gun producing

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10 Kev electrons, a Helmholtz coil, the magnetron, two movable wire screens, and a fluorescent screen. The Helmholtz coil serves both as magnetic lens and for the production of the constant magnetic field of 72 gauss for the magnetron. The total length of the optical path is 94 cm.

The magnetron used for this study is of elementary design. The anode cylinder has a diameter of 2 cm. and a length of 3 cm., and is held at a positive potential of 45 volts and 60 volts. The cathode is coaxial and is held at zero potential. Two directly heated cathodes are used; one cathode is a tungsten wire of 0.025 cm. diameter and the other is a tantalum cylinder of 0.2 cm. outside diameter and a wall thickness of from 0.0025 cm. to 0.0035 cm. The magnetron has no end shields. The viewing electron beam and the cathode heating current are pulsed with an appropriate phase shift so that the magnetron is observed while no current is flowing through the filament.

In order to study the trajectories of the electrons in the wide viewing beam, two wire screens are placed in the path of the beam. The shadow pattern cast by these two screens is observed on a fluorescent screen. The technique consists in taking two pictures of the fluorescent screen, one with the unknown electric field, and one without this electric field. The asymptotes of the electron trajectories before and after the object (unknown field) can be determined from the photographed shadow patterns and the geometrical constants of the system, such as the position of both wire screens, object, electron source, and number of meshes per unit length of the wire screens used. Using a relation between conjugate elements of the optical system and straightforward geometric considerations a formula for the deflection angle of the electron trajectories in the unknown field is derived as a function of observed quantities. A practical example of the application of this formula is given.

The relation between the strength of the unknown electric field and the measured deflection angles for the case of the magnetron is deduced. Three cases are considered:

- (a) Motion of electrons in a constant electric field without magnetic field.
- (b) Motion of electrons in crossed constant electric and magnetic fields.
- (c) Motion of electrons in a radial electric field without magnetic field.

Numerically, the experimental values show that the deflection angle of a trajectory in the case (a) is only 3 per cent larger than in the case (b). The error made in computing the deflection angle for a constant electric field (case (a)) instead of computing the deflection angle for a radial electric field (case (c)) is negligible. The deflection angles computed according to the case (b) represent the correct value.

The effect of the electric fringe field of the particular magnetron structure is deduced from a potential map obtained from an electrolytic wedge tank experiment.

The correctness of the method applied to a magnetron without space charge is tested by comparing the deflection angles measured by the electron optical method and the theoretically expected deflection angles. The deflection angles agree within the sensitivity of the method which is better than 5 per cent.

The effect of the electric fringe field for the magnetron with space charge is assumed to be the same as the effect of the electric fringe field for the magnetron without space charge. The error made is believed to be small and the consequence of such an error is discussed. Thus, it is possible to measure experimentally the radial distribution of the electric field in a magnetron with space charge. The electric field distribution in the magnetron operated under cut-off conditions is determined quantitatively in 5 experiments in which the cathode temperature, the cathode radius, and the anode voltage is varied. The change of pattern due to the space charge is very marked. The sharp field change at the cloud radius predicted by Hull's theory is not confirmed.

A very important pattern showing a ring is observed. The presence of this ring is found to be caused by the space charge. This ring pattern reveals the presence of a negative space charge lens. The electric field distribution for this experiment can be determined qualitatively only. A slow rotation of the pattern is also observed and can be explained only by a slow motion of the space charge cloud.

The space charge distribution is computed from the field plots by the use of Poisson's equation. The space charge distribution is found to have three different shapes. The shape of the space charge distribution is found to be in close relationship with the symmetry of the tube:

(a) If the cathode is very accurately aligned with respect to the anode the space charge distribution appears to have a maximum at a radius corresponding to the theoretical cloud radius.

(b) If the cathode is slightly displaced with respect to the axis of the magnetron the space charge seems to have a radially falling off distribution with some slight indication of a plateau.

(c) In the third case the cathode makes an angle with the axis of the tube. The space charge distribution is then not constant in time.

These conclusions are of qualitative nature. The results of the measurements are in disagreement with Hull's theory. The space charge distribution having a maximum at the cloud radius appears to represent the true distribution for an aligned magnetron. An elaborate numerical computation done by Page and Adams has resulted in a similar space charge distribution. This space charge distribution is an indication of the presence of a double stream of electrons. A theory

explaining the mechanism relating the shape of the space charge distribution and the symmetry does not yet exist.

The original theory of the magnetron fails to account for the fact that in all experimental tests a small anode current (excess current) is measured in cut-off conditions. The experiments carried out here seem to confirm the theory of noise amplification of Haeff. The strong noise in the magnetron space charge makes the shadows unsharp. The electron stream would according to this theory also be double stream. Haeff's theory explains not only the presence of excess current but also the fact that all the here observed space charge distributions fall off gradually toward the anode.

The potential distribution computed from the measured field curve corresponding to a gradually falling off space charge distribution is in good agreement with the potential distribution measured earlier by Engbert by a wire probe method. Engbert observes mainly a potential distribution corresponding to a falling off space charge distribution as a result of the asymmetry introduced by adding the probe.

The electron optical mapping of the magnetron field has a relative accuracy of ± 10 per cent and an absolute accuracy of ± 20 per cent. The space charge density is affected accordingly with an error of ± 30 per cent. The main source of errors is the uncertainty of the electric fringe field under space charge conditions. An error caused by the effect of ions is excluded.

The electron optical shadow method is compared with a similar method using a pencil-beam and no optical system. The electron optical shadow method is seen to be more sensitive and to furnish more rapidly a complete field map and this with a greater accuracy. The method is not only suitable for the present and further investigation of the magnetron but also for the study of gas discharges and other space charge problems. The method can also be used for the complete study of electron optical lens characteristics.

STUDIES IN EXPERIMENTAL INFECTIONS OF ALBINO RATS AND MICE

by HAROLD FRIEDLANDER *

In a search for a suitable test organism, which would produce an experimental infection in white mice involving lesions in the liver, species from four genera of bacteria have been studied. *Micrococcus pyogenes* var. *aureus* was found to be unsatisfactory for our purposes because it rarely produced observable lesions in the liver; it was not sufficiently virulent for mice; and it caused death from acute toxemia when given in doses large enough to kill all the untreated animals.

A plan was then adopted for isolating pathogenic bacteria from normal laboratory animals. The method consisted of exposing mice by intravenous injection, to the mixed bacterial flora of the intestinal tract and the throat. The suspension of intestinal bacteria was prepared by emulsifying fecal material in broth and passing this mixture through coarse filter paper. The inoculum of throat bacteria was prepared by streaking throat swabs from the animals on appropriate solid culture media and suspending in broth the total growth obtained after a suitable incubation period. The test organism was to be isolated in pure culture from the lesions produced in the mice by inoculation of these suspensions. By use of this method useful species from three genera of bacteria have been isolated from normal animals.

Salmonella enteritidis was isolated from the lesions in the livers of mice injected intravenously with a suspension of fecal bacteria from stock white rats. This organism produced a highly uniform experimental infection in white mice when injected intravenously, intraperitoneally, or subcutaneously. Generalized necrosis of the liver was the most prominent feature of the experimental disease. Experiments were carried out to determine the effect of streptomycin, chloromycetin, and aureomycin on the experimental infection in mice. The first two antibiotics delayed the death of the infected mice, but saved none of them. Aureomycin saved 3 out of 10 mice given 4 subcutaneous injections of .100 gm./kgm. per day for 4 days following inoculation of the test organism. The experimental infection showed no detectable response to treatment with sulfones.

A bacillus resembling *Corynebacterium kutscheri* was then isolated by the above mentioned method from throat cultures of normal white mice of the National Institutes of Health general purpose strain. The same organism was also isolated by plate culture from a subcutaneous abscess of a white mouse and from the pus in lung abscesses of three uninocu-

* B.S. 1934, The College of the City of New York; A.M. 1939, The George Washington University; Ph.D. conferred May 31, 1950.

lated white rats. Isolation of similar organisms from rats has not previously been reported.

This organism is a Gram positive, non-motile bacillus three to six tenths of a micron in diameter and one to three microns in length. The cells are straight or slightly curved and often club-shaped. Alternate bands of stained and unstained material appear when the cells are treated with Gram or methylene blue stains. Metachromatic granules may be demonstrated by Neisser's stain. Angular and palisade arrangement of the cells is frequent. On blood agar plates the organism produces round, convex colonies about one millimeter in diameter after 48 hours incubation at 37° C. There is a slight greening of the medium. The colonies are white, opaque, and glistening with an even margin and smooth surface. Growth on unenriched nutrient agar is less abundant. In nutrient broth a granular turbidity and heavy sediment appear. No pellicle is formed. Gelatin is not liquified. There is no visible growth on potato. On Loeffler slants there is moderate colorless growth, no peptonization. There is no change in litmus milk and indol is not formed from tryptophane. Nitrite is produced from nitrate. The organism is aerobic. It grows anaerobically in the presence, but not in the absence of carbon dioxide. Esculin and sodium hippurate are hydrolyzed, but arginine is not. Hydrogen sulfide is not produced. The bacillus elaborates catalase. Acid but no gas is produced in broth containing glucose, levulose, maltose, mannose, sucrose, and starch. Salicin may or may not be fermented. No acid is produced from adonitol, amygdaline, arabinose, cellobiose, dextrine, dulcitol, erythritol, galactose, glycerol, inositol, inulin, lactose, mannitol, raffinose, rhamnose, trehalose, and xylose. Growth at 37° C. is more luxuriant than at room temperature. Ammonia is not produced by growth in peptone water. No evidence of toxin production has been obtained.

The organism is virulent for white mice when injected intravenously or intraperitoneally. Subcutaneous injection generally results in a localized abscess which drains and heals. The intravenous L.D. 50 for 20 gm. white mice is approximately 10,000 viable bacilli as determined by plate count. Mice given 200,000 viable bacilli intravenously die in from 3 to 8 days following infection. At autopsy the kidneys show multiple abscesses in which the diphtheroid bacilli may be demonstrated in large numbers by smear and culture. The liver frequently shows one or more localized abscesses. The lungs occasionally show abscesses large enough to be seen without magnification. Gross abscesses in other organs occur occasionally and have been observed in heart muscle, brain, and joints.

Tissue from many of the inoculated animals which died of *Corynebacterium* infection was submitted for histopathological studies. Microscopic examination of representative specimens of this material

taken during the early stage of the disease revealed that the lung involvement consisted of scattered abscesses containing clumps of bacteria and infiltrated with lymphocytes, monocytes, and a few neutrophils. The kidneys showed scattered abscesses in the cortex and medulla with clumps of bacteria in the lesions and an infiltration of lymphocytes. The spleen showed scattered areas of focal necrosis with clumps of bacteria in the lesions. The liver showed multiple abscesses around the central vein and an infiltration of monocytes. The adrenals showed several small areas of focal necrosis. Heart involvement consisted of scattered areas of necrosis in the myocardium containing masses of bacteria. Lymph gland involvement consisted of an area of focal necrosis and slight edema. When the brain was involved, the sections showed scattered large and small abscesses containing clumps of bacteria and infiltrated with lymphocytes and neutrophils.

The experimental infection of mice with this organism responded well to treatment with streptomycin. The culture had an *in vitro* sensitivity to this compound of one-half microgram per millilitre. Twenty gram white mice were inoculated intravenously with approximately 200,000 viable bacilli as determined by plate count. Immediately following the inoculation a single injection of the drug was given subcutaneously in various doses. There were no deaths in the group receiving 50 mg. of streptomycin per kg. of body weight. All those in the untreated group were dead in seven days. In another similar experiment where smaller doses of the drug were given, the activity of streptomycin was also evident. Fifty per cent of those receiving a single injection of 14 mg. per kg. survived. Twenty per cent of those receiving 6 mg. per kg. survived. All of the controls were dead in 6 days.

An attempt was made to determine the virulence of strain MT-9 of *Corynebacterium* for three other rodents. Rabbits and guinea pigs were found to be immune. The white rat was found to be susceptible when injected intravenously or intraperitoneally.

The intravenous L.D.₅₀ for 100 gm. rats was approximately 4,000,000 viable bacilli. At this dose those animals which died showed multiple abscesses of the lungs. The pus in these lesions contained the bacilli in large numbers. Many animals also showed abscesses in the kidneys and liver. Polyarthritis occurred in all survivors of the intravenous L.D.₅₀. The lesions in the liver and kidneys appeared during the first week after inoculation and were generally not seen in animals autopsied two or more weeks following infection. The abscesses in the lungs persisted for some time and have been observed in animals autopsied two months after infection. They first became evident about 3 days after inoculation as small white dots about 2 mm. in diameter distributed quite uniformly throughout the lungs. The adjacent tissue was generally not inflamed. The size of the abscesses increased with time,

consolidation occurred, and lesions often developed with a diameter of 10 mm. Adhesions to the pleura were quite common. Rats autopsied 4 months following infection showed scar tissue in the lungs where abscesses had apparently healed.

The polyarthritis first appeared 2 days following infection and the joint swellings generally increased to reach a maximum 3 weeks later. The tarsus was most frequently involved, but swellings also occurred in the carpus and joints of the digits. In some cases the arthritis gradually subsided especially where animals had been infected with small doses. In others the arthritis persisted and gradually became worse. Some joints showed calcification and ankylosis. The diphtheroid bacillus was isolated in pure culture from such lesions 5 months after inoculation.

Histopathological studies of tissue from inoculated rats which died of *Corynebacterium* infection showed that the early lesions in the internal organs were quite similar to those found in mice and described above. However, the mice showed joint lesions only occasionally, whereas the rats showed a high incidence of joint involvement. Sections of these joints taken during the early or acute stage of the infection showed moderate edema and proliferation of the capillaries of the joint capsule; periostitis and erosion of the periosteum and endosteal surfaces of bone and articular cartilage; and infiltration of monocytes in the medullary portion of the shaft. Specimens taken later, during the subacute stage of the infection, showed abscesses of the soft tissue of the joint and of the medullary portion of the bone; infiltration of monocytes; thickening of the joint capsule, periostitis, and osteomyelitis. At the beginning of the chronic stage of the infection the joints showed a marked thickening of the joint capsule and partial destruction of articular cartilage. Masses of fibrin, purulent exudate, and bits of bone and cartilage were seen lying in the joint cavity.

A search through the literature on the subject revealed that the first report of a species related to ours was made by Kutscher in 1894. He isolated a bacillus from a caseous abscess in the lung of a mouse which had died spontaneously. He named the organism *Bacillus pseudotuberculosis murium*. It is described in Bergey's Manual under the name *Corynebacterium kutscheri*. The next report was published by Bongert in 1901. This author isolated the organism from mice which had been inoculated with material from horses dying of pneumonia. He felt his organism was not the same as Kutscher's bacillus and named it *Corynebacterium pseudotuberculosis murium*. In 1927, Holzhausen reported isolation of a diphtheroid bacillus from mice which had been inoculated with brain emulsion from a rabid dog. This bacillus was highly virulent for mice and was named *Corynebacterium murisepticum*. It is described in Bergey's Manual under that name. In 1930, Condrea reported isolation of a pathogenic diphtheroid bacillus from subcutaneous

nodules of stock mice. He made no reference to the work of Kutscher and Bongert and named his organism *Corynebacterium murium*. In 1931, Fischl, Koech, and Kussat reported isolation of a diphtheroid bacillus from the knee joint of a white mouse from a breeding colony. They named the organism *Corynebacterium arthritidis muris*.

The descriptions of the above mentioned diphtheroids were compared, using the original organism of Kutscher as the standard of reference. A culture labeled *Corynebacterium kutscheri*, obtained from the American Type Culture Collection, was studied to help in establishing relationships.

From comparisons of all these organisms we have concluded that the bacilli described by Kutscher, Condrea, and ourselves are quite similar, but probably not identical. Since the first two strains are no longer available, it is not possible to be sure whether or not the described differences are real or due to the lack of similarity of media and animals used. The bacilli described by Bongert; Holzhausen; and Fischl, Koech, and Kussat appear to have been separate species which have not been reported since by other workers. The bacillus isolated by Professors Topley and Browning, carried by the American Type Culture Collection under the name *Corynebacterium kutscheri*, is quite different from our strains and from all the other diphtheroids mentioned.

We now applied to human subjects the method used to isolate pathogenic diphtheroids from throat cultures of normal mice. Two strains of alpha type streptococci were isolated from the arthritic lesions of mice resulting from intravenous injection of cultures from human throats.

The first organism, designated J.S.T., is Gram positive with spherical or ellipsoidal cells approximately .6 micron in diameter, usually in short chains. On blood agar, after twenty-four hours incubation at 37° C., the colonies are one millimeter in diameter. They are round, white, convex, opaque, with smooth margin and glistening surface. The colonies are surrounded by a zone of alpha hemolysis. After the same incubation period on nutrient agar the colonies are one-half millimeter in diameter. In nutrient broth the organism grows luxuriantly producing uniform turbidity and a moderate amount of sediment. Gelatin is not liquified. Litmus milk is acidified and coagulated. There is no visible growth on potato. Arginine and sodium hippurate are hydrolyzed, but esculin is not. Ammonia is not produced from peptone. Nitrate is reduced to nitrite. Indol and hydrogen sulfide are not formed. The organism is aerobic, facultative anaerobic. Acid but no gas is produced in broth containing dextrin, galactose, glucose, lactose, levulose, maltose, mannose, salicin, starch, sucrose, and trehalose. No acid is formed from adonitol, amygdaline, arabinose, cellobiose, dulcitol, erythritol, glycerol, inositol, inulin, mannitol, raffinose, rhamnose, sorbitol, or xylose. The

organism tolerates 4 per cent of sodium chloride, but is inhibited by .01 per cent methylene blue.

The organism is pathogenic for white mice when injected intravenously or intraperitoneally. The intravenous L.D.₅₀ for twenty gram mice is approximately five million viable organisms as determined by plate count. At this dose the animals which die show multiple abscesses of the kidneys, a high incidence of abscesses in the heart muscle, and a high incidence of arthritis. The carpus and tarsus are most frequently involved, but arthritis of knee, hip, elbow, and joints of the digits occurs frequently. The organism may be isolated in pure culture from these joints during the first few weeks of the infection. The pus in abscesses produced by this organism has a characteristic orange color. The arthritis of the tarsus and carpus is often observable eighteen hours following the injection. The swelling generally reaches a maximum in one week and gradually subsides thereafter. Arthritis of the hip joint is not generally observable until several weeks after inoculation, but persists longer than the swellings in most of the other joints. The injury to some of the joints is apparently permanent.

The organism is pathogenic for white rats. The L.D.₅₀ for one hundred gram rats is approximately twenty million viable organisms as determined by plate count. At this dose those animals which die show the same type and distribution of lesions as was described for the white mouse. The arthritis in white rats is similar in nature and distribution to that described for white mice.

Tissue from many of the inoculated mice and rats which died of streptococcus infection was submitted for histopathological studies. Microscopic examination of representative specimens of this material revealed that the kidneys were quite uniformly involved and showed multiple abscesses and numerous clumps of streptococci in the glomeruli and tubules. Heart lesions were quite common and consisted of scattered abscesses containing streptococci in the endocardium and myocardium. Some hearts had extensive lesions in the myocardium at the apex of the heart. Involvement of the other internal organs was rare. It consisted of small areas of focal necrosis in the liver and spleen. The lungs, when attacked, showed a slight serous exudate and infiltration of polymorphonuclear leucocytes in the alveoli and moderate hyperemia.

In the early stage of the infection the joint involvement consisted of abscesses, edema, and proliferation of blood capillaries of the soft tissue; periostitis; abscesses of cartilage and endosteal proliferation. Later during the subacute stage of the infection the joints showed abscesses of soft tissue and muscle with clumps of streptococci; periostitis and bone necrosis. The infections were particularly severe at the metaphysis. In the chronic stage there was marked thickening of the joint capsule; destruction of articular cartilage; marked periostitis; necrosis of the

epiphysis and formation of cartilagenous tissue; calcium deposits and infiltration of polymorphonuclear leucocytes.

The second strain of arthritis producing alpha type streptococcus was designated F.J.H. It is similar to the first strain morphologically, and in all but two biochemical reactions. Strain J.S.T. ferments lactose and produces acid and coagulation in litmus milk. Strain F.J.H. does not ferment lactose and causes no change in litmus milk. The two cultures are different serologically. An antiserum prepared by inoculating rabbits with strain J.S.T. agglutinates that organism to a titre of 1 to 5120. The same antiserum has a titre of 1 to 320 against strain F.J.H. The organisms also differ in virulence for mice and rats.

Strain F.J.H. kills only three out of twenty mice at an intravenous dose of two hundred million viable organisms. The same dose of strain J.S.T. kills all the mice so exposed. The appearance and distribution of joint lesions is similar for both strains. However, the abscesses in the heart muscle produced by strain J.S.T. are generally not caused by strain F.J.H. The second strain is of lower virulence for both rats and mice and produces lesions mainly in the joints and kidneys.

THE METABOLISM AND PHARMACOLOGICAL ACTIONS OF LITHIUM

by JACK LONDON RADOMSKI *

Early in 1948 a preparation consisting essentially of a 25 per cent solution of lithium chloride was marketed as a salt substitute. Since lithium chloride tastes very similar to sodium chloride in contrast to the unpleasant metallic taste of potassium chloride, the chief component of most current salt substitutes, this preparation achieved immediate popularity. Because of an almost complete lack of information available in the literature on the pharmacology and toxicology of the lithium ion, concern about the possibility of toxic effects arising from the *ad libitum* use of this preparation led to the initiation of this investigation. The objectives of this study were to determine the toxicity of lithium salts under different dietary conditions, to study the manner in which lithium produces its toxic effects, and to determine its metabolic fate in the animal body.

The determinations of lithium, sodium, and potassium in blood, urine, and tissue were carried out on a Beckman flame photometer. A detailed discussion of the techniques involved in the successful operation of this instrument is included. Further, new and simplified methods for calibration of the instrument and particularly for compensation for the mutual interference effect of sodium and potassium are described.

The acute and subacute toxicity of lithium chloride to dogs and rats and the effect of the sodium content of the diet on the toxicity were determined. It was found that lithium is decidedly more toxic to dogs on a low sodium diet than on a normal diet. On a low sodium diet, death was obtained regularly at oral doses of 50 to 20 mg. per kg. administered daily (except Sunday). These doses were uniformly non-toxic to dogs on a normal diet. Feeding lithium chloride to rats incorporated into both a normal and a low sodium diet revealed that this species is also markedly more susceptible to the effects of lithium administration on a low sodium diet.

The symptoms of intoxication observed in these animals were tremors, lethargy, salivation, bloody stools, anorexia, and weight loss, extreme ematiation, coma, and death. These symptoms were essentially similar in animals on a low salt diet and on a normal diet.

To determine the mechanism by which lithium produces its toxic effects in animals on a low salt diet, groups of dogs were administered daily doses of 50 and 20 mg. per kg. of lithium chloride and 88 mg. per kg. of potassium chloride. The blood and urine chemistry of these animals

* B.S. 1943, University of Wisconsin; Ph.D. conferred May 31, 1950.

was compared with control dogs on low salt diet. It was found that the dogs receiving lithium chloride exhibited a marked diuresis, maintained a markedly higher level of sodium excretion and somewhat lower level of potassium excretion than the controls or the dogs receiving potassium chloride. As the animals approached death the urine output fell off and approached oliguria, while marked increase in serum potassium and blood nonprotein nitrogen were found. The serum sodium level had a tendency to be irregular, but usually fell to below normal values. Typically, lithium poisoned dogs showed, as death approached, serum potassium levels of 8 to 12 mEq. per liter, serum sodium levels of 110 to 130 mEq. per liter, and serum lithium levels of 4 to 6 mEq. per liter. Calculation of the sodium balance of these dogs revealed that the dogs receiving lithium were in negative balance throughout the experiment and lost a very substantial portion of their body sodium.

Blood level and excretory studies were likewise performed on dogs maintained on a normal diet. Death was obtained in all cases at a daily dosage of 100 mg. per kg. The results obtained with these dogs were similar to the results obtained on dogs receiving lower doses of lithium on a low salt diet. Diuresis was obtained in all cases. The same inability to conserve sodium in combination with anorexia which became very marked at approximately the midpoint of the survival time caused a loss of body sodium comparable to that of dogs on low salt diet. Terminal rises of serum lithium and potassium, and blood non-protein nitrogen were found to occur. Abnormally low serum sodium levels were usually but not always found.

The results of the blood studies on the surviving dogs receiving 50 and 20 mg. per kg. of lithium chloride were all normal.

Electrocardiographic changes were obtained in all the animals receiving toxic doses of lithium chloride. These became marked in the terminal stages of lithium poisoning. The changes found were: increased T-wave amplitude and T-wave inversion, disappearance of P-waves, QRS widening, disorganization of the QRS complex, and bizarre biphasic curves immediately preceding cardiac arrest. All these have been reported in the literature as being characteristic of the electrocardiographic abnormalities associated with potassium intoxication. The changes obtained were correlated with the level of serum potassium in these dogs. Further, injection of enough lithium chloride to yield a blood level of 4 to 5 mEq. per liter, the level usually found in terminal lithium poisoning, did not produce abnormalities of this nature. It was therefore concluded that one of the important causes of death in terminal lithium poisoning is the accumulation of cardiotoxic levels of potassium.

Histological study of the tissues of these animals showed a slight to moderate degree of kidney damage. Usually the damage was confined

to the distal convoluted tubule, the collecting tubule, and the terminal parts of the distal looped tubules. The glomeruli and the proximal tubule were usually normal. The adrenals of both animals receiving lithium and the control dogs on low salt diet showed hyperplasia, particularly of the zona glomerulosa.

The apparent volume of distribution of lithium in dogs, rats, and a monkey after a single intravenous injection have been determined. It was found in these animals that lithium is distributed in a volume approaching the total body water in a manner similar to potassium. These results are in agreement with the results of the analysis of the tissues of dogs poisoned with lithium chloride. It was found that, for the most part, lithium was evenly distributed throughout the organs analyzed. Furthermore, calculation of the lithium concentration per liter of the estimated water content of these tissues revealed a close agreement with the lithium concentration per liter of water of the serum.

Reports in the literature indicated that substantial quantities of lithium are excreted in the feces. Analyses of the feces of dogs and rats receiving lithium chloride revealed the presence of insignificant amounts of lithium. Coupled with the fact that in the dogs receiving subacute doses of lithium chloride virtually all the administered lithium that was not retained in the body was recovered from the urine, these results demonstrate that subacute doses of lithium are completely absorbed and excreted almost entirely in the urine.

Further experiments were carried out in an attempt to further illuminate the mechanism by which lithium produces its toxic effects. It has been demonstrated that lithium intoxicated dogs are incapable of conserving sodium in the presence of a sodium deficiency and have a reduced ability to excrete potassium. Terminally there was evidence of dehydration, hyperkalemia, hyponatremia, and azotemia. Since all these effects are also associated with adrenal insufficiency, it was felt that perhaps lithium exerts its toxic effects by inhibiting the excretion of adrenal cortical hormones. If this be the case, the administration of adrenal cortical extract and/or desoxycorticosterone acetate (DOCA) should produce a dramatic reversal of these toxic effects. This hypothesis was tested, first by administering large doses of DOCA to dogs which had developed the pattern of electrolyte excretion characteristic of lithium poisoning. A second experiment in which both DOCA and adrenal cortical extract were given to dogs receiving 50 mg. per kg. of lithium chloride on low salt diet from the outset of the lithium administration. The development of toxic effects were compared with untreated dogs receiving this dose of lithium chloride on low salt diet. In neither experiment was any change due to the administration of adrenal hormones noted in the pathological pattern of electrolyte excretion or the development of the usual toxic effects of lithium adminis-

tration. The only effect of DOCA administration seemed to be the shortening of the survival time.

One of the most striking features of lithium administration to dogs is the extent to which the accumulation is favored by a low salt diet. The administration of 50 mg. per kg. of lithium chloride daily to dogs on a normal diet produced marked accumulation of lithium in two to six weeks. It was suggested above that the attempted therapeutic administration of DOCA appears to shorten the survival time of lithium poisoned animals. It seemed reasonable that the adrenals of animals on low sodium diet must excrete abnormally large amounts of desoxycorticosterone, to achieve the remarkable conservation of their body sodium which they do. This thesis is supported by the histopathological evidence of adrenal cortical hyperplasia and the development of a lymphopenia in lithium poisoned animals. Therefore, the hypothesis was evolved that the necessity of conserving sodium in a low sodium diet results in an increased secretion of adrenal cortical hormones which is responsible for the increased reabsorption of lithium by the kidney and the accumulation of toxic serum levels of lithium. To test this hypothesis, a dog was placed on 50 mg. per kg. per day, of lithium, and given large daily injections of DOCA. A negative sodium balance and a positive lithium balance were obtained in this animal. Further the animal accumulated a toxic level of lithium and died after exhibiting the typical biochemical manifestations of terminal lithium poisoning. While these results are not yet conclusive, the suggestion is strong that hyper-activity of adrenal cortex may be responsible for the increased susceptibility of animals on sodium restricted diets to the toxic effect of lithium.

Evaluation of the extent of the functional renal impairment by means of the phenolsulfonphthalein excretion test was carried out on lithium intoxicated dogs. It was found that a decrease in the excretion of this dye was detectable considerably before any of the other signs of renal difficulty. In severely poisoned dogs approaching *terminus*, the excretion of phenolsulfonphthalein was very markedly reduced. Thus it appears that the primary site of action of lithium is the production of toxic effects on the renal tubule. In view of the observed loss of much of the body sodium and water in lithium poisoned animals, and the clinical appearance of a dog in the terminal stages of poisoning, it appeared likely that circulatory collapse would contribute to the death of these animals. To evaluate the importance of this contributory mechanism, several dogs in the terminal stages of lithium intoxication were intravenously administered isotonic saline daily. The effect of this therapy was to temporarily improve the animals' condition, lower the blood non-protein nitrogen and the serum potassium somewhat, and

prolong the survival time. However, if lithium administration was continued, the animals still died of typical renal failure.

From the toxicological points of view, the results of this investigation readily explain why the *ad libitum* usage of lithium chloride had occasional toxic results. The lowest level of lithium administered, 20 mg. per kg. per day produced death in 12 to 20 weeks to dogs on low salt diet. This figure translated to a 70 kg. man would be equivalent to the ingestion of but 1.4 gm. per day. Considering the usual level of sodium chloride ingestion by man, it is easy to see how amounts of lithium chloride of this order could be ingested. Furthermore, a large proportion of patients who are placed on low salt diet and a salt substitute prescribed already have impaired kidney function which would undoubtedly favor the increased accumulation of lithium and render their kidneys more susceptible to the effects of this poison. These facts make obvious the unsuitability of lithium compounds as salt substitutes.

It is felt that the history of the use of lithium chloride as a salt substitute points up the dangers inherent in releasing a substance for use on the basis of clinical trials alone without a thorough knowledge of its pharmacology and toxicology which can only be obtained from extensive animal experimentation.

UNITED STATES PLANT EXPLORERS IN SOUTH AMERICA DURING THE NINETEENTH CENTURY

by WAYNE DAVID RASMUSSEN *

NORTH AMERICAN PLANT EXPLORERS IN SOUTH AMERICA PRIOR TO 1800

Prior to 1800, there was little plant exploration by North Americans in South America. The persons interested in botanical exploration or in securing new plants naturally turned their attention to the unexplored North American continent immediately at hand. Nevertheless, there was a certain amount of indirect contact. For example, Orinoco tobacco, the Irish potato, and long-staple cotton, all of which originated in South America, were introduced into the English colonies, as were other plants of lesser importance. Some of the European plants introduced into Spanish America by the Spaniards also found their way into North America.

The outstanding systematic effort to introduce West Indian and Central and South American plants into the English colonies was made from 1732 to 1738 by the trustees of the colony of Georgia. The trustees hired first William Houstoun and then Robert Millar to collect plants for the Public Garden in Savannah. In spite of the difficulties of climate and disease (to which Houstoun succumbed), the lack of adequate transportation, and the obstructions offered by the Spanish officials at Vera Cruz, many seeds and plant specimens were collected. However, nothing of lasting value to Georgian agriculture was sent to the Public Garden. The most important result of the expeditions was that the plant specimens and seeds sent to Philip Miller of the Chelsea Physic Garden were described in his *Gardener's and Botanist's Dictionary* and were distributed to European scholars.

SAMUEL LATHAM MITCHILL AND A PERIOD OF TRANSITION

The first part of the nineteenth century was a period of transition for plant exploration by United States citizens in South America. It was marked by the beginnings of a true scientific interest: an interest in scientific botany and an interest in more widespread experimentation with new seeds and plants from South America. This interest was essentially a minor phase of the stirrings of intellectual change and advancement that was marked by the establishment of scientific societies and scientific and agricultural journals.

Many persons took an active part in bringing about these advances, but perhaps the transition is best epitomized in the activities of Samuel Latham Mitchill (1764-1831). He was interested in agriculture, botany,

* A.B. 1937, Montana State University; A.M. 1939, The George Washington University; Ph.D. conferred May 31, 1950.

chemistry, geology, medicine, mineralogy, paleontology, and zoology and made contributions to the advancement of each one of these fields. Mitchill was a member of most of the learned societies of his day and was a moving spirit in the founding of many.

Mitchill made two outstanding contributions towards arousing interest in plant exploration in South America. On December 6, 1813, he delivered an address before the New York Historical Society on writings illustrating the botanical history of North and South America. Then in 1817, Mitchill was instrumental in appointing Jeremy Robinson as agent of the New York Lyceum of Natural History and the *Medical Repository* in South America to facilitate the interchange of information between scientists of the two continents.

Robinson had been appointed an agent of the State Department, and, although his appointment was revoked, he left for South America late in 1817. He spent a short time in Buenos Aires, several months in Peru, and over three years in Chile. Although his work for Mitchill was subordinate to other activities, he did initiate correspondence between Mitchill and several South American scientists, most of whom had some interest in plant life. Robinson, who was interested in botany, also collected seeds of unusual, medicinal, crop, and garden plants and sent them to Mitchill. The most important result of this work was the publication of several articles about and by Peruvian scientists in the *Medical Repository* from 1820 to 1822. Since the *Repository* was a general scientific rather than a purely medical journal, these articles reached most scientists in the United States.

In general, Mitchill's contributions to plant exploration in South America should not be overestimated. Mitchill did typify his generation in science and his work indicated that there was much to be done in the field; more concrete accomplishments were to be made by later specialists.

THE SOUTH AMERICAN COMMISSION, 1817-1818

The South American Commission, appointed by President Monroe, was a diplomatic rather than a scientific mission. However, William Baldwin, the naval surgeon accompanying the commission, was a capable botanist and made extensive collections of plants within limited areas. One of the commissioners, Theodorick Bland, was interested in agriculture, and his report contained comments on agriculture in Argentina and Chile. Bland introduced club wheat from Chile into Maryland and neighboring states.

After their return from South America in 1818, the commissioners submitted separate reports to the President since no two could agree on a joint statement. These accounts were reprinted in whole or part in several contemporary newspapers, and many letters written by the

commissioners, Brackenridge, Baldwin, and others accompanying the mission also appeared in periodicals. Brackenridge published a two-volume account of the mission, and Baldwin published a scientific paper with notes on a few of the plants he had collected.

The most important result of the mission so far as its diplomatic and political aspects were concerned was the increased interest aroused regarding South America and its struggle for independence. The scientific results, at least in the long run, were more important. Baldwin's collection of plant specimens was available for study in the Academy of Natural Sciences of Philadelphia, his notes were of assistance to contemporary botanists, and his work aroused scientific interest in South American plants. Although the club wheat imported by Bland did not become a permanent crop in the eastern United States, it assisted in awakening interest in importing improved varieties of plants, an interest that was eventually to mean much to American agriculture.

THE INTRODUCTION OF SEEDS AND PLANTS FROM SOUTH AMERICA,
1818-1862

The introduction of South American seeds and plants, which was both a result of and a stimulus to plant exploration, was carried on during the period 1818 to 1862 by governmental agencies and private individuals as well as by major expeditions. Governmental activity began with the issuance of directives, the first dated March 26, 1819, to consular and naval officers abroad, urging them to send valuable seeds and plants back to the United States. Results from these directives were limited, in part because there was no official responsible for receiving and distributing such plants. This task was voluntarily assumed by Henry L. Ellsworth, Commissioner of Patents, in 1836. As a result, appropriations were made for collecting and distributing seed, and, in 1862, through a combination of this and other factors, the Department of Agriculture was created. Much of the seed distributed by the Patent Office was procured through commercial channels. Some was obtained by exchange with various countries, including several in South America, and some was contributed by travelers and by naval officers and diplomats stationed abroad. Only one special mission was sent by the Patent Office to South America to secure seeds and cuttings: that of 1856-1857 charged with obtaining sugar cane cuttings from the northern coast of South America.

Naval officers, diplomats, and travelers in South America sent seeds not only to the Patent Office but also to friends, editors of agricultural journals, agricultural societies, and seed firms. Such activities and publicity given them aroused local interest in South America as a possible source of profitable new crops or improved varieties of established plants. Chilean wheat and alfalfa and South American potatoes may be

mentioned as introductions which have been of considerable importance to American agriculture. Other crops, such as arracacha, quinoa, and yerba maté, have never been widely grown in this country. Nevertheless, the exchange of plants and seeds was one form of cultural exchange that reached many persons who were reached by few of the other aspects of inter-American relations.

THE UNITED STATES EXPLORING EXPEDITION IN SOUTH AMERICA,
1838-1839

The United States Exploring Expedition, vigorously promoted by Jeremiah N. Reynolds and authorized by Congress in 1836, left the United States on August 10, 1838, under the command of Lieutenant Charles Wilkes, to make scientific explorations of the Pacific and certain other areas. Three of the civilian scientists accompanying the expedition were concerned with plant collecting: Charles Pickering, William Rich, and William D. Brackenridge.

During the last part of 1838 and the first half of 1839, the expedition made stops in Rio de Janeiro, Patagonia, the Strait of Magellan, Valparaiso, and Callao. Plants and seeds were collected, and observations of the flora and agriculture were made at each of these points, while a few trips inland were made from Rio de Janeiro, Valparaiso, and Callao.

The plants and seeds collected in South America were sent back to the United States from Rio de Janeiro and from Callao. The living plants and seeds in this group appear to have been sent to a Philadelphia gardener. Upon the return of the expedition in 1842, William D. Brackenridge was placed in charge of the living plants and seeds brought or sent back by the expedition. As the plants increased and varieties were added from other sources, plants and seeds were made available for distribution by members of Congress, a custom that continued for many years. This collection also formed the basis for the United States Botanic Garden.

The dried plants, representing nearly 10,000 species, were used in preparing the botanical reports of the expedition, and eventually were deposited in the Smithsonian Institution, where they formed the nucleus of the Smithsonian's National Museum herbarium. After many difficulties, three volumes on the botany of the expedition were published.

The United States Exploring Expedition, unappreciated at first, did much to promote scientific study and exploration. It had, however, little measurable effect on inter-American cultural relations, although the first volume of Wilkes' *Narrative*, which had a large circulation, discussed the work of the expedition in South America and offered varied comments on South American life and institutions.

NAVAL EXPLORING EXPEDITIONS IN SOUTH AMERICA, 1849-1860

From 1849 to 1860, the United States Navy sponsored three major expeditions to South America which carried on some plant exploration and collection work. The expedition under the direction of Lieutenant J. M. Gilliss was charged primarily with making astronomical observations in Chile; that under Lieutenant William L. Herndon with exploring the Amazon River; and that under Lieutenant Thomas J. Page with exploring the La Plata basin.

The United States Naval Astronomical Expedition to the Southern Hemisphere, under Gilliss, was in Chile from 1849 to 1852. Gilliss managed to collect a few botanical specimens, but he was more interested in living seeds and plants. A lively exchange was established between William D. Brackenridge, in charge of the government greenhouse in Washington, and friends of Gilliss in Chile. After Gilliss returned to Washington, he regularly sent books, including the Patent Office reports on agriculture, to Chile and finally arranged for Chile to join in the annual exchange of scientific volumes sponsored by the Smithsonian Institution. Gilliss perhaps did more to initiate lasting cultural exchanges between scientific workers in the United States and Chile than any other one person during the nineteenth century.

The valley of the Amazon was explored by Lieutenant William L. Herndon and Lieutenant Lardner Gibbon from 1851 to 1852. This expedition had been inspired by Matthew Fontaine Maury, who regarded the Amazon valley as a possible new area of settlement for Negro slaves and their white owners of the United States. The reports made by Herndon and Gibbon, however, tempered this enthusiasm. Both Herndon and Gibbon brought back small collections of botanical specimens, seeds, and living plants. The published reports of the expedition contained unusually full accounts of the agriculture of the regions visited. While Maury's urgings and the reports by Herndon and Gibbon aroused much interest in the United States in the possibility of Brazil opening the Amazon River to free international navigation, Brazil was suspicious of the interest of the United States and did not open the river until after the Civil War.

The most extensive of the explorations sponsored by the Navy during this period was carried out under the leadership of Lieutenant Thomas Jefferson Page in the La Plata river system from 1853 to 1856 and from 1859 to 1860. From 1853 until 1855, the expedition was accompanied by Edward Palmer. Palmer and Page collected about five hundred species of plants which were deposited in the National Herbarium of the Smithsonian Institution. While in Paraguay, Page intervened in a quarrel between the United States consul, Edward A. Hopkins, and López, dictator of Paraguay. Subsequently, the *Water Witch*, Page's

ship, was fired upon by a Paraguayan battery. The incident was finally settled peacefully with the aid of a United States fleet. Page published an account of his explorations which was popular enough to call for two editions and several printings.

The reports of all three expeditions were widely circulated and served to draw public attention to South America, while the natural history collections added to our store of knowledge regarding the continent. The reports stood for some years as the most complete available on the areas that they covered.

SCIENTIFIC EXPEDITIONS OF INDIVIDUALS AND LEARNED INSTITUTIONS. 1852-1877

Non-governmental scientific explorations between 1852 and 1877 resulted in collections of plants from Colombia, Venezuela, and Brazil, several worthwhile accounts of travels, and the introduction of groups of students to scientific work in South America. The period was also marked by the participation of several scientists in more than one expedition.

Isaac Farwell Holton, a professor of natural science, collected plants in Colombia from August 1852 to May 1854. After his return to the United States, he published a volume on his travels, *New Granada: Twenty Months in the Andes*, which contained observations on Colombian vegetation and agriculture and which, from its tone, should have promoted a sympathetic understanding of the Colombian people in the United States.

From 1854 to 1858, except for one visit to the United States, Augustus Fendler, an able professional plant collector, was collecting in Venezuela. His specimens were important additions to the herbariums receiving them.

Louis Agassiz, who was in Brazil with a group of able young assistants from April 1865 until June 1866, while not primarily interested in plants, made a collection of palms for the Museum of Comparative Zoology of Harvard University. He collaborated with his wife on a deservedly popular volume, *A Journey in Brazil*. Agassiz, a true "good-will ambassador," has been credited with influencing the Brazilian government to open the Amazon River to international navigation.

The Lyceum of Natural History of Williams College sponsored an expedition to South America under the leadership of James Orton in 1867. Five students accompanied the expedition. The members were divided into two sections, one proceeding across Venezuela to the Rio Negro and the Amazon, the other crossing the continent from Ecuador to Pará. Both sections collected plants, some of which, at least, were identified by Dr. Asa Gray. Orton described the trip from Guayaquil to Pará in a volume entitled *The Andes and the Amazon; or, Across the*

Continent of South America. Two of the Williams College students, H. M. Myers and P. V. N. Myers, described the trip from Venezuela to the Amazon in *Life and Nature under the Tropics*. Orton made two subsequent trips to South America. He died on September 25, 1877, while crossing Lake Titicaca during his third expedition.

The Cornell Exploring Expedition of 1870, sometimes referred to as the Morgan Expedition, was headed by Charles Frederic Hartt, a geologist who had accompanied Agassiz to Brazil, and Albert Nelson Prentiss, a botanist. The two professors succeeded in collecting many specimens for the University Museum and for class use and gave their nine students practical field experience. Four of the students later became naturalists of note, and two spent considerable time in South America. Hartt, like Orton, made additional trips to South America and died in Rio de Janeiro while head of a commission appointed to carry out a geological survey of Brazil.

EXPLORATIONS BY INDIVIDUAL SCIENTISTS, 1885-1899

Plant exploration during the last decade and a half of the nineteenth century was marked by a number of important expeditions led by trained scientists and by the organization of a systematic program for plant and seed introduction. The work of Henry Hurd Rusby was of particular importance since it led indirectly to the formulation of a program by N. L. Britton for cooperative botanical exploration in northern South America. Rusby collected in Bolivia from 1885 to 1886, on the lower Orinoco in 1896, in Colombia during 1917, and in Bolivia and Brazil from 1921 to 1922. He made important collections on each of these expeditions and published many articles and books on South American plants and on his travels.

A young naval officer, William E. Safford, collected at various points along the South American coast from 1886 to 1887 and served as World's Columbian Exposition commissioner to Peru and Bolivia from 1891 to 1892. After he resigned from the navy, Safford drew upon the investigations he had made at those times in developing basic studies on the ethnobotany of the ancient inhabitants of South America.

The explorations of Thomas Morong in Paraguay from 1888 to 1890 were inspired by Rusby's earlier work in Bolivia. Morong's expedition was very successful, and he brought back an important collection of plants. Like Rusby, he published several articles on the plants he collected and on his travels.

The Princeton University sponsored three expeditions to Patagonia between 1896 and 1899, all under the leadership of J. B. Hatcher. While the expeditions were concerned primarily with paleontology and geology, Hatcher made plant collections that added to the knowledge of the flora of southern Patagonia.

A notable collection of Colombian plants was made at the turn of the century by Herbert Huntington Smith, assisted, especially with the fungi, by Charles F. Baker. While no publications of general interest resulted from the work, Smith's collection was a notable addition to the herbarium of the New York Botanical Garden and was of value to research workers.

THE INTRODUCTION OF SEEDS AND PLANTS FROM SOUTH AMERICA, 1862-1900

Plant and seed introductions by individual travelers and by seedsmen and farm periodical editors during the last part of the century did not receive the publicity that such activities had received in the previous half-century. While many novelties were brought in, no important introductions adding noticeably to the agricultural wealth of the country were made by individuals.

The Department of Agriculture, established by an act of Congress of May 15, 1862, undertook a larger share of the activity. William Saunders, who served in the Department from 1862 until 1900, carried on some work in introducing new seeds and plants throughout the period. This permitted a continuing effort although individual Commissioners and Secretaries of Agriculture came and went. Most of the Commissioners and Secretaries, however, were interested in the work.

Horace Capron, Commissioner of Agriculture from December 5, 1867, to July 31, 1871, inaugurated a system of agricultural exchanges with foreign countries that was of importance both because of the plants exchanged and because the exchange was a new effort in the field of international cooperation. After a few years, the exchanges became a matter of routine. Considerable effort was expended by the Department in introducing and attempting to establish the culture of such tropical crops as cinchona, rubber, and yerba maté. The most important single introduction during the period was the navel orange from Bahia, Brazil.

The closing years of the century witnessed a transition in the governmental work of introducing seeds and plants. A group of able, young botanists, with the support of Secretary of Agriculture James Wilson, developed a new aggressive approach to the problem which led to the establishment in 1898 of the Section of Foreign Seed and Plant Introduction. The Section was established to undertake systematic introductions through experts sent out from the Department. Its aims were the establishment of new plant industries, the discovery and introduction of new varieties of plants already in cultivation, and the collection of species for breeding purposes. The establishment of the Section meant an even greater institutionalization of plant introduction activity. It marked the final culmination in a large-scale cooperative endeavor of a

work that for eighty years had been carried on largely by sporadic individual enterprise.

THE CENTURY IN RETROSPECT AND A NEW PERIOD OF TRANSITION

The nineteenth century saw plant collecting in South America by United States plant explorers develop from minor individual efforts at its beginning into major endeavors with its end. The work during the century was dependent upon the interest and initiative of individual scientists and travelers. Much was accomplished, and much remained to be done. The discoveries of the twentieth century, however, were to be made for the most part by careful and planned cooperative work both in the field and in the laboratory. The transition between the nineteenth and twentieth centuries, in so far as it concerned plant collecting in South America, was particularly marked by the establishment of the Section of Foreign Seed and Plant Introduction of the Department of Agriculture in 1898 and by the formulation in 1918 of a plan by several learned institutions for the cooperative botanical exploration of the northern part of South America.

The activities of the plant explorers, brought to public attention by their collections, the introduction of new seeds and plants, and books and articles on their travels and work, served both to advance science and agriculture and to promote better inter-American relations. Several of the explorers did much to promote the exchange of ideas as well as plant materials with South American scientists. Through establishing these exchanges and making South America better known to many persons in the United States, the plant collectors provided some of the factual knowledge that is essential to mutual friendship and understanding in the Americas and demonstrated in a practical way that citizens of the two continents could be of assistance to each other.

STUDIES ON THE BINDING OF BARBITURATES TO PROTEINS AND ITS POSSIBLE RELATION TO THEIR DISPOSITION AND ACTION IN ANIMALS

by LEO ROBERT GOLDBAUM*

INTRODUCTION

Pharmacology, today, is rapidly approaching the problem of drug action at the level where the drug molecules exert their peculiar effect on the chemical reactions taking place in the cell. The exact mechanism of most drug action is still unknown but advances have been made toward the solution of this problem. The evidence to date strongly suggests that most drugs produce an effect through an interaction between drug molecules and a receptor on or inside the cell. These drug receptors are specific proteins, enzymes of a particular system, whose functions are interfered with by the drug combination. The same drug molecule is capable of interaction with other proteins in the body even though its pharmacological activity is concerned with specific enzyme systems. Thus, a drug molecule may interact with a specific receptor protein in the brain causing a sedative effect, with another receptor in the liver resulting in degradation of the drug molecule and finally, it may react with other proteins in the body and produce no demonstrable pharmacological response.

The plasma proteins participate in this latter type of drug-protein interaction. These proteins have been shown to bind, in varying degrees, a large number of small organic molecules as well as inorganic ions. The availability of standardized plasma proteins of known homogeneity has greatly stimulated the study of the fundamental nature of the interaction of small molecules with proteins. Interest has centered on the albumin fraction of the plasma proteins since few drugs are known to bind with plasma globulin. Considerable information is being accumulated on the nature of the binding of drugs to purified serum albumin.

The physiological and pharmacological importance of this interaction has been pointed out by many investigators. It is believed that binding may be an important function of serum albumin in the transport of many substances from one part of the body to another just as hemoglobin carries oxygen. The combination with protein may serve to increase the solubility of water insoluble substances so that they can be carried in higher concentrations through the body. In chemotherapy, serum albumin was shown to inhibit the action of many antiseptics and disinfectants. Such agents as sulfonamides, penicillins, and streptomycin have been found to bind to albumin in varying amounts, thereby affecting their dis-

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position and action. Protein binding is important in the concepts of renal physiology. A knowledge of the fractional binding of a substance must be ascertained before the mechanism of its renal excretion can be determined. This interaction also is important in the determination of circulating blood volume by the use of dyes and the estimation of extracellular space by the use of thiocyanate.

It is the purpose of this dissertation to study the binding of a series of substituted barbituric acids by proteins in an attempt to examine some of the factors involved in this interaction, and to correlate this physiochemical property with the *in vitro* and *in vivo* action of these drugs. Substituted barbituric acids are widely used in clinical medicine. More than one hundred substituted barbituric acids have been synthesized and evaluated pharmacologically. It has been found that slight changes in the barbituric acid derivatives significantly affect their action and fate. Such closely related compounds, because of their highly diverse pharmacological activity, are eminently suited for investigations correlating chemical structure and physiochemical properties with pharmacological activity.

EXPERIMENTAL

The extent of barbiturate binding to purified crystalline bovine serum albumin, human serum albumin, rabbit plasma, and tissue homogenates was determined by the method of ultrafiltration using the technique described by Lavietes. Studies on the conditions involved in the preparation of ultrafiltrates indicated that this procedure is satisfactory for the determination of the binding of substituted barbituric acids by proteins. The Visking cellulose membrane has the necessary property of preventing the filtration of proteins and not absorbing barbiturates which freely pass through the membrane. The concentration of barbiturate in the ultrafiltrate is determined only by the initial concentration of drug and protein and not by the changes that occur during ultrafiltration. Increase in temperature causes a more rapid rate of filtration without affecting the extent of binding.

A comparison of the binding of 0.001M barbituric acids by 1 per cent bovine serum albumin in M/15 phosphate buffer pH 7.4 shows a linear increase in the fraction bound with lengthening of the substituted alkyl side chain on the five positions of the malonylurea nucleus, increasing from 0.05 for diethyl to 0.65 for n-hexyl ethyl. Replacing one of the ethyl groups with an allyl or bromallyl group increased the fraction bound 0.07 and approximately 0.24 respectively. The introduction of a phenyl group in place of an ethyl group results in only a small increase in binding, approximately 0.15 as compared with an increase of 0.60 for the corresponding six membered alkyl n-hexyl compound. Saturation of both the benzene ring and the aliphatic chain increases the binding. Thio-barbiturates are bound to a much greater extent than their oxygen

analogues. The fraction of thiopental bound is 0.65 compared with 0.37 for its analogue pentobarbital. There is no relation between binding and acid strength since there are only slight differences in the pK 's of the substituted barbituric acids. A high correlation exists between polarity and binding. The less polar the barbiturate the greater the binding, which is probably due to the attraction of the substance away from the water phase towards the protein. These findings agree with the suggestion that the primary bond between drug and protein is electrostatic, but the combination is stabilized by van der Waals forces through close approximation of the non-polar residues to similar structures of the adjacent protein surfaces.

A study of the effect of varying pH 's on the binding of five representative barbiturates shows a progressive increase in the binding between pH 5.0 to pH 8.0 where a maximum is reached, after which there is a decrease in the binding at the higher pH 's. No difference in the binding is noted with phosphate and borate buffers at the same pH . The maximum binding of barbiturates takes place near their pK values which may indicate the importance of the dissociation of these compounds in their interaction with serum albumin.

The binding of substituted barbituric acids by serum albumin appears to be a relatively weak reversible combination. Chloroform can remove barbiturates readily and quantitatively from their combination with serum albumin. Temperature changes have little effect on the binding, indicating that the free energy of the interaction is small.

Goldstein, applying the law of mass action, developed the following expression for the interaction between drug molecules and proteins:

$$r = \frac{n(A)}{K + A}$$

r = moles of bound drug per mole of total protein

K = binding constant

n = the number of receptor groups on each protein molecule

A = the concentration of unbound drug

The binding constants and the number of groups attached to serum albumin can be determined by plotting $\frac{1}{r}$ against $\frac{1}{A}$. Straight lines are obtained for the five barbiturates studied with slopes $\frac{K}{n}$ and intercepts $\frac{1}{n}$. The intrinsic binding constants are calculated to be approximately 1.0×10^{-4} for all the barbiturates but the number of attachment groups available on the protein molecule are different for each of the barbiturates studied. Thiopental reacted with 17 groups, secobarbital 10 groups, pentobarbital 8 groups, phenobarbital 4 groups, and barbital less

than 2 groups. Increasing nonpolarity of the compounds tends to attach to more receptor groups on the albumin molecule with no apparent effect on the binding constants.

The effect of increasing concentrations of barbiturates on the fraction bound by bovine serum albumin shows an increase in the amount of barbiturate bound with a decrease in the fraction bound. As the concentration diminishes, the fractions bound tend to approach unity. At the relatively low blood and tissue levels encountered in pharmacology and chemical therapeutics (approximately 2.5×10^{-4} M), the fractions of these barbiturates bound by one per cent serum albumin are thiopental 0.80, seconal 0.56, pentobarbital 0.47, phenobarbital 0.27, barbital 0.14. Similarly, as the concentration of albumin increases, the fraction of barbiturate bound also approaches a maximum. At the serum albumin concentrations normally present in the blood of animals and humans (approximately 3 to 5 per cent), the fraction bound is nearly maximal for the five barbiturates. The binding of 5×10^{-4} M barbiturates by rabbit plasma containing approximately 3 per cent albumin shows that thiopental is 0.85 bound, seconal 0.64, pentobarbital 0.51, phenobarbital 0.41, barbital 0.16. Although at low albumin concentrations the binding of barbiturates does increase rapidly, above 3 per cent a further increase in albumin produces only a small increase in the binding. Small variations in the normal serum albumin will have only a slight effect on the binding. In pathological cases where very low or very high serum albumin concentrations may occur, there is the possibility of an effect on the binding and on the distribution and action of these drugs. A comparison of the binding of thiopental by human and bovine serum albumin shows almost identical binding.

Alterations can occur in the binding of barbiturates by the introduction of other substances into the system. Thiopental, a strongly bound barbiturate, is capable of displacing both seconal and pentobarbital from its combinations with albumin. The latter barbiturates have only a slight effect on the thiopental binding. The ability of a structurally dissimilar organic anion, sodium lauryl sulfonate, to displace thiopental is similar to Karush's finding that a long chain alkyl sulfate could displace a carboxylic azo dye. Increasing molarities of phosphate buffer cause an increase in the binding of thiopental by serum albumin from 0.70 at 0.066 M to 0.80 at 0.60 M. There is no change in the binding of thiopental in solutions containing 1, 2, or 3 per cent sodium chloride.

If drug binding plays an important part in the distribution, excretion, and metabolism of drugs, then any alteration of this combination may affect the pharmacological properties of the drug. For example, a compound that will displace barbiturate from its combination with serum albumin but is not readily diffusible across the vascular membrane, will increase its concentration in the extracellular fluid compartment and

present the tissues with an increased amount of barbiturate. If the displacing compound is not retained in the blood stream but readily penetrates intracellularly, it may interfere with the binding of barbiturates by the tissue proteins as well as serum albumin. Such interference with barbiturate binding may be the explanation for the prolongation of barbiturate anesthesia recently reported by such compounds as carinamide and some detergents. Brodie recently reported that a lowering of the pH of the blood of a dog by the inhalation of high concentrations of CO₂ caused a lowering of the thiopental concentration in the blood which returned to its former level when the pH of the blood was again normal. Since binding of thiopental can be affected by pH changes, this shift in thiopental distribution may be attributed to alteration of the thiopental-protein interaction. Similar competitive binding for proteins may be involved in the effect of carinamide on penicillin excretion and with hippuran and diodrast on phenol red excretion.

Because of the complex composition of tissue homogenates, no information concerning the absolute nature of the binding can be determined. However, a comparison can be made of the relative abilities of different tissues to bind substituted barbituric acids. The following relationships are observed:

(1) When the binding of the plasma is compared with similar concentrations of purified serum albumin, the binding can be accounted for by the albumin fraction. The plasma binding of thiopental is slightly higher than the binding of similar concentrations of serum albumin. The additional binding is probably contributed by the globulin fraction. With the other barbiturates, the plasma binding is lower than that of the bovine serum albumin. The binding by the other protein fractions is probably so small that the contribution to the plasma binding is insignificant.

(2) All the tissues investigated are capable of binding barbiturates. The amount of serum albumin in the tissues homogenates can contribute only a moderate fraction to the total binding. For all the barbiturates except thiopental, the ability of the various tissues to bind barbiturates is highest in the liver, followed by plasma, heart, kidney, lung, brain, muscle, and red cells. Thiopental differs from the others by being bound to a greater extent by plasma than by liver. This again is probably due to the additional binding of thiopental by the globulin fraction of the plasma.

(3) The relative bindings of the five barbiturates by the tissues are similar to those obtained with purified bovine serum albumin. This indicates a drug-protein interaction taking place in the tissues similar to that which occurs with serum albumin. Since enzymes comprise some of the protein concentration of the tissues, the binding by tissues homogenates may reflect the binding of barbiturates on enzymes. Thus the

various barbiturates may be bound in the same relative proportions on the specific enzyme systems responsible for the pharmacological action of these drugs.

A study of the distribution of barbiturates in the rabbit was made with five representative barbiturates that were bound in varying degrees to serum albumin and tissue homogenates. Thus, a comparison can be made on the effect this property may have on the distribution of these drugs in the various tissues of the body and, if possible, on their pharmacological activity. The results of the distribution of five barbiturates under similar conditions of dose and time intervals after administration show that the strongly bound barbiturates (thiopental, seconal, and pentobarbital) tend to concentrate in the tissues while the weakly bound barbiturates (phenobarbital and barbital) distribute themselves primarily in the body water. For example, the seconal plasma level is approximately one-third the liver level and is much lower than all the other tissues except muscle. The barbital plasma level is approximately equal to the liver level and higher than all the other tissues. The strongly bound barbiturates localize in those organs that were found to have the greatest affinity for barbiturates. The liver has the highest concentration followed by heart, kidney, lung, brain, and muscle. This same pattern of distribution tends to persist at the longer time intervals after the administration of these drugs.

The weakly bound phenobarbital and barbital are found in relatively low concentrations in the brain. This may account for the inability of these barbiturates to produce narcosis at these doses. There is an increase in brain concentration with time and a decrease in the plasma to brain ratios after one hour. This may be an explanation for their slower onset of anesthesia and their long duration of action. On the other hand, the strongly bound barbiturates (thiopental, seconal, and pentobarbital) rapidly attain high brain concentrations. This results in deep anesthesia. There is only a decrease in the brain concentration with time and no change in plasma to brain ratios. The potency of these strongly bound barbiturates is not due merely to the high concentration in the central nervous system, for even the brain barbiturate levels which produce little or no effect with barbital and phenobarbital cause intense narcosis. The brain levels of the five barbiturates after one hour indicate that there will be an inverse relationship between binding and potency as shown by the awakening levels. The strongly bound barbiturates are more effective at lower brain concentrations as well as lower blood levels. There also appears to be a direct correlation between the rate at which the barbiturate concentration decreases in the blood and tissues and their binding to proteins.

The relationship between chemical structure, physical properties, and pharmacological action of a large number of substituted barbiturates has

been extensively investigated. A close parallelism is found between some of the physical properties such as solubility in water, oil to water distribution, and carbon atoms on the alkyl side chain. All these properties have been related to the mechanism of anesthetic action.

In an attempt to relate structure to the pharmacological action of substituted barbiturates, Swanson studied the effect of substitution in minimal anesthetic dose and duration of action. He found that an increase in the length of one or both of the substituent alkyl side chains resulted in an increased anesthetic potency with a shorter duration of action. Others have shown that allyl and bromallyl linkages also enhance potency. The replacement of oxygen by sulfur in the urea portion of the barbituric acid nucleus gave rise to powerful anesthetics which are ultra short-acting. Studies have been made on the relation of chemical structure to the concentration of various barbiturates needed to produce 50 per cent inhibition of Arbacia egg cell division, 50 per cent inhibition of rat brain cortex oxygen consumption, the rate of destruction by liver slices *in vitro*, and the time of onset of anesthesia. There is a close parallel of all these studies to the fraction bound by serum albumin.

The relationship between binding and inhibition of brain tissue respiration indicates that barbiturates are bound to the specific enzyme system which brings about narcosis in the same relative amounts in which they are bound to tissue homogenates and serum albumin.

Since combination with enzymes is generally considered an important phase in enzymatic action, those barbiturates that are most strongly bound to proteins should produce the greatest effect on enzyme systems. There should be a corresponding increase in inhibition of those enzymes involved in tissue respiration and an increase in breakdown with those enzymes involved in metabolism. Thus, it is found that the strongly bound barbiturates are the most potent, have the lowest AD_{50} and LD_{50} , require the lowest concentration to produce inhibition of Arbacia egg cell division and inhibition of rat brain cortex oxygen consumption, and have the shortest delay in onset of anesthesia. These activities appear to involve the enzymes in the central nervous system that are inhibited by barbiturates. A close relation between the fraction bound and the breakdown in the animal body also is found. The strongly bound barbiturates are destroyed most rapidly by liver slices and have the shortest duration of action. Therefore, it appears that increased binding to the enzyme system, whose function is related to metabolism of these drugs, causes increased rate of destruction resulting in shorter duration of action.

CONCLUSION

Drug-protein interaction is important in considering the disposition and action of barbiturates. There are many receptors in the body avail-

able for their binding. Plasma proteins may be considered as secondary receptors whose combinations with barbiturates play a role in their distribution. There are other important receptors in the body as shown by the studies of tissue binding. Some of these proteins are enzyme systems, whose action is influenced by the barbiturate combination causing characteristic pharmacological responses. Combination with other enzymes results in the degradation of the drug. Other receptors act like plasma proteins and are involved in the distribution and release of these drugs to the enzyme receptors. Thus, it is found that the strongly bound barbiturates are the most potent and are destroyed most rapidly in the body.

The study of the relative binding of a series of substituted barbituric acids and their distribution in the rabbit indicates the importance of this interaction in the distribution of these drugs. The strongly bound barbiturates tend to concentrate in the tissues while the weakly bound barbiturates distribute themselves primarily in the body water. Information concerning the nature of the interaction between barbiturates and purified serum albumin and the factors effecting this interaction may be useful in the understanding of drug-enzyme reactions. The striking parallelism between this property and the *in vitro* and *in vivo* action of barbiturates emphasizes this close relationship. In the preparation of new barbiturates as well as other drugs, this property of drug-binding should be considered.

THE RELATIONSHIP OF SKELETAL MUSCLE TONE TO CAROTID BLOOD PRESSURE

by JAMES THOMAS HICKS •

INTRODUCTION

The following study was undertaken to show the ability of the artificially stimulated mammalian nerve-muscle preparation, *in situ*, to develop and maintain tetanic contraction following the intravenous injection of agents which alter the general blood pressure.

Data have been obtained which indicate a relationship between general blood pressure, as measured directly from the carotid artery, and the amount of tension developed by the soleus and gastrocnemius muscles of the cat.

The interrelationship between general blood pressure and muscle tension was tested under the influence of epinephrine, mechohyl, histamine, pitressin, and bacterial polysaccharide.

The ability of skeletal muscle to maintain posture is an important function that depends, among other things, upon its ability to resist fatigue. It has been shown, in the intact animal, that this ability is chiefly dependent upon receiving impulses from repetitively firing motor units.

Adrian and Bronk stimulated the nerves to the hind limb of the cat and found that with low frequency of stimuli, feeble contractions were obtained, while with higher frequencies, stronger contractions were observed. Stimulation of the gastrocnemius at 10/sec. gave a tension of 1.3 grams, but a stimulation of 100/sec. gave a tension of 1.8 grams.

Cooper and Eccles, working with the gastrocnemius of the cat found that the fusion rate was 100/sec. but that steady posture could be obtained with rates as low as 16/sec. when they were recording isometrically.

Briscoe and Leyshon were among the first to employ the neon tube stimulator. Briscoe investigated means for obtaining prolonged contraction of muscle. She found three essential things necessary to produce prolonged postural contraction by electrical stimulation (1) low rate of stimulation, (2) depth of anesthesia in which the corneal reflex is still present, and (3) adequate blood supply to the muscles.

Davis and Davis, using similar methods, found that the soleus muscle of the cat gave a nearly fused tetanus at a stimulus frequency of 20/sec. They found that the more rapid the stimulation, the lower was the tension level.

Adrian and Bronk recognized the importance of the "massaging" action

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of the intermittent contractions of the individual fibers upon blood supply to the muscle.

Briscoe found that if occlusion of a vessel takes place after a muscle has been put into contraction, the posture gives way gradually after a delay of a few seconds.

Leese and Davis found that at any frequency maintained between 18 and 60 stimuli per second, the level of muscle tension is a function of carotid pressure. Tension of muscle was found to be low, under 100 mm. of mercury blood pressure in the carotid artery, and it was not influenced by changes in frequency of stimulation. They found that an increase of blood pressure of from 100 to 160 mm. of mercury, increased tension as much as 100 per cent. Above 160 mm. of pressure the tension level decreased.

The property of mecholyl to lower the blood pressure was first investigated by Hunt and Traveau. It was found that mecholyl caused parasympathetic stimulation with cardiac inhibition and peripheral vasodilation involving nearly all blood vessels.

In 1928, Kam and his associates separated the pressor fraction from the other components of the posterior pituitary. This substance, pitressin, when injected into animals causes a rise in blood pressure by acting directly on the arterial musculature to cause vasoconstriction.

Dale and Richards found that histamine caused a decrease in blood pressure due to the dilatation and increased permeability of the capillaries. The blood pressure was lowered solely by the action on the vascular bed since histamine has no direct cardiac action.

Oliver and Schaefer were among the first to note that epinephrine caused a rise in blood pressure. The action of epinephrine upon blood pressure was found to be variable depending upon the dose used. E. E. Nelson found that small doses of epinephrine, 1:100,000, caused a passive dilatation in the leg vessels. Hartman and Evans found that, in the cat, constriction of the capillaries was rare with doses of epinephrine as large as 0.5 cc. of 1:10,000. It is commonly observed that epinephrine in dosages of 1:1,000 causes constriction of all peripheral vessels, including the veins.

METHODS AND MATERIALS

The experiment was conducted in two sections—one group of cats was under the influence of nembutal anesthesia; the other consisted of decerebrate preparations. The latter were given ether anesthesia long enough for decerebration to be accomplished.

The cats were both male and female, weighing between $3\frac{1}{2}$ and 4 kilograms. The ages of the cats could not be determined. The animals given nembutal anesthesia were all anesthetized to about the same plane of anesthesia. The corneal reflex was intact.

The animals were tied to a cat board and the carotid artery was cannulated so that blood pressure could be measured directly by means of a mercury manometer. The jugular vein was cannulated and the cannula attached to a 0.85 per cent saline reservoir so that drugs could be administered easily and all washed into the vein with an equal volume of saline.

The sciatic nerve was dissected free and cut as close to its appearance through the greater sciatic foramina as possible. The nerve was pulled through a bakelite tube containing two stimulating electrodes. The electrodes were attached by means of wires to a helium discharge stimulator. This stimulator gave a constant frequency output of 30 stimuli per second throughout all the experiments. The gastrocnemius and soleus muscles on the ipsilateral leg were dissected free and attached to isometric muscle levers. The brass isometric levers were designed by Dr. C. E. Leese.

The muscle tensions, the blood pressure, and the timer were all recorded on a Phipps-Bird electric kymograph.

A three-way Jackson wash-out paraffin-lined cannula with a $1\frac{1}{2}$ mm. opening on the arterial side was attached to the carotid artery. One end was attached to the rubber tubing coming from the manometer, the other end was attached to a small hose so that the cannula could be washed out if a clot should occur.

Epinephrine was prepared in dilutions of 1:1,000; 1:10,000; and 1:100,000. It was administered by inserting a needle attached to a syringe into the rubber tubing connecting the saline reservoir and the jugular cannula. The drug was washed in with 5 cc. of saline.

The other agents used were prepared in the following dilutions: mecloyl 1:1,000,000; histamine 1:25,000; and pitressin 1 unit per cc. of normal saline. Each drug was administered by the same technique described for epinephrine.

In order to measure, objectively, the corresponding muscle contraction curves and blood pressure curve areas, an engineer's planimeter manufactured by the Keuffel and Esser Co. was utilized. This instrument permits the areas under irregular curves to be measured in square centimeters. A constant abscissa of two minutes was employed for corresponding muscle and blood pressure curve areas.

To show a correlation between normal blood pressures and normal areas of muscle contraction, the procedure outlined in Snedacor's Statistical Method was followed. For an over-all evaluation of the evidence gathered by using normal and drug effected blood pressures and areas of muscle contraction, the difference-mean as outlined in Albritton's "Experimental Design and Judgment of Evidence" was used.

RESULTS

The data collected were obtained from 25 male and female cats which weighed from $3\frac{1}{2}$ to 4 kilograms. The ages of the cats could not be determined. Decerebration was used in the early experiments to see if nembutal anesthesia had any effect upon blood pressure areas and muscle contraction areas. Nembutal values did not seem to be different from the decerebrate values so decerebration was discontinued.

To test for correlation between blood pressure and muscle contraction, the blood pressure areas and isometric muscle contraction areas obtained on kymograph records were subjected to measurement by means of a planimeter which converted the area to square centimeters. The gastrocnemius and soleus contraction areas, which had been obtained by a stimuli of constant frequency and strength, were subjected to correlation analysis together with blood pressure values. The "r" value was found to be 0.281, which is highly significant. The correlation was found to be positive between the two factors tested for correlation.

After determining the correlation between normal blood pressures and areas of muscle contraction, the correlation between the blood pressure that had been increased by pitressin and the muscle contraction areas under the influence of pitressin was determined. Testing 23 injection results from 15 animals, it was found in correlation analysis that "r" was 0.57. This is highly significant. A positive correlation was also noted. The mean-difference method as outlined by Albritton was used to determine if the increase in muscle tension areas was statistically significant. The muscle contraction areas were used since it has been established that pitressin constantly, in one unit dosages, causes an increase in blood pressure. It was therefore advisable to see if this increased blood pressure also brought about a statistically significant increase in area of muscle contraction. It is highly significant. $\frac{1}{2}P$ was found to be less than 0.5 per cent and rules out a chance relationship.

Mecholyl was administered to see if the correlation and mean-difference existed between the blood pressure and muscle contraction area when the blood pressure was lowered. Testing 24 injection results from 10 animals, it was found that in the correlation analysis, "r" was equal to 0.820 which is highly significant. A positive correlation was also noted.

Testing the same number of experiments and animals using the mean-difference, it was found that P was equal to less than 0.5 per cent, indicating that the muscle contraction area was reduced significantly from the normal by decreasing the blood pressure.

The correlation and mean-difference values were calculated for epinephrine, using the blood pressure and muscle contraction areas.

Testing 44 injection results on 20 animals, it was found that "*r*" was equal to 0.795, which indicates that there is a correlation between blood pressure and muscle area under the influence of epinephrine. A positive correlation was found.

Testing the same data for the mean-difference, the $\frac{1}{2}P$ value for muscle contraction areas under the influence of epinephrine, 1:100,000, was found to be less than 0.5 per cent, indicating that the results were caused by the agent and not due to chance.

$\frac{1}{2}P$ for the muscle contraction areas under the influence of epinephrine 1:10,000 was found to be less than 0.5 per cent, which is very significant. This indicates that the values obtained were due to the agents and not due to chance.

$\frac{1}{2}P$ for the muscle contraction area under the influence of the 1:1,000 epinephrine was found to be less than 2.5 per cent and therefore significant. This indicates that the change was due to the agent and not due to chance.

The mean-difference calculations show that the muscle contraction areas were significantly altered by the epinephrine-induced changes in blood pressure.

Polysaccharide-25 was administered in the same manner as described for the other drugs, and the data were treated similarly.

Testing 27 injection results from 15 animals, it was found in the correlation analysis that "*r*" was equal to 0.29, which is insignificant. This was probably due to the fact that P-25 gave a fluctuating blood pressure record.

Testing the same number of experiments and animals using the mean-difference, it was found that $\frac{1}{2}P$ was greater than 2.5 per cent and therefore not significant.

This indicates that the muscle area was not changed significantly from the normal by decreasing the blood pressure.

The femoral artery, which is the source of blood supply to the gastrocnemius and soleus muscles was clamped for various time intervals before the muscles were stimulated to show more clearly the effect of lack of blood flow upon muscle tension. No measurements were made of the contraction areas with a planimeter since the visual effects were striking. The tension diminished steadily until the blood supply had been cut off for about six minutes when the muscle then failed to respond.

The following illustrations show the comparative effects of various agents used in this study on blood pressure and muscle areas.

Vagal stimulation was contemplated as a method for lowering the blood pressure but this was discontinued because vagal stimulation for two minutes in cats caused too much variation in the pressure curves, making comparable results difficult.

DISCUSSION AND CONCLUSIONS

Testing the hypothesis of Leese and others (10) that blood pressure affects muscle tone, 153 normal tests were made on 25 cats. The carotid blood pressures were measured over the same two minutes as the isometric contractions of the soleus and gastrocnemius muscles. The area of the blood pressure and muscle tensions were measured on a chart using an engineer's planimeter so that common values in square centimeters could be obtained. This gave a positive correlation when subjected to the correlation method outlined by Snedacor (24). The correlation coefficient "r" was found to be 0.281, which is significant.

Having established that normally there is a positive correlation between blood pressure and muscle area, it was decided to alter the blood pressure experimentally to see if the positive correlation continued under varied conditions.

Parke-Davis pitressin was administered in dosages of 1 unit to bring about a rise in blood pressure. A rise was noted in all 23 cases. An increase in muscle contraction area was noted in all cases. The correlation between the blood pressure values under the influence of pitressin, and muscle contraction areas gave a coefficient of 0.57, which is significant, and shows a positive correlation. The areas of muscle tension before and after the administration of pitressin were compared by the mean-difference statistical method. The increase in muscle tension area was found to be definitely significant as $\frac{1}{2}P$ was less than 0.5 per cent, indicating the change was due to the agent and not due to chance. This increase in muscle tension area is attributed to the increased blood flow through the muscle which removes the metabolites and in this manner enables the muscle to resist fatigue. Goodman and Gilman state that the principal peripheral action of pitressin is to constrict the capillaries, and to some extent the arterioles (14). This may increase the blood flow passing through the muscles temporarily. This increase seemingly offsets the constriction of the capillaries so that metabolites are being removed at an increased rate, thus causing the muscle to resist fatigue during the 2 minute period of observation. The initial slowing of the heart (14) did not seem to affect the ability of the muscle to resist fatigue as apparently the cardiac slowing had been offset by the increased flow through the veins from the constricted arterioles. Anesthetics, even in moderate doses, seem to depress the cardiac reflexes so that the peripheral vascular effect seems to overcome the cardiac slowing (14).

Histamine, 1:25,000, was administered in 1 cc. dosages to bring about a fall in blood pressure. A fall in blood pressure was noted due to the direct action of the histamine on the dilator mechanisms of the capillaries of the body. A slight arteriolar constriction is said to occur in cats but this seems to potentiate the effect of the fluid leaving the capillaries. This constriction is very slight as a fall in

blood pressure to a low level was observed in all cases. The heart rate immediately after injection remains normal but the fall in blood pressure causes a reflex acceleration. This cardiac acceleration is not sufficient to overcome the fall in blood pressure during the two minute period of muscle stimulation. A decrease in muscle tension values, under the influence of histamine was noted in all cases. The correlation coefficient between blood pressure area and muscle contraction area values under the influence of histamine was found to be 0.55 which is significant, and shows a positive correlation. The muscle-tension areas before and after the administration of histamine was compared by the mean-difference statistical method. The decrease in muscle tension areas was found to be significant as $\frac{1}{2}P$ was less than 0.5 per cent, indicating the changes were due to the agent and not chance. This decrease in muscle tension area is attributed to the low blood pressure which causes low blood flow through the muscle, thus allowing the metabolites to accumulate and increase the susceptibility of the muscle to fatigue. It is true that there is a capillary dilatation but as is known, histamine tends to stagnate blood in the vessels. This stagnation or slowing of blood flow seemingly offsets the capillary dilatation to such an extent that the muscle readily succumbs to fatigue.

Mecholyl, 1:1,000,000 was administered in 1 cc. dosages to bring about a fall in blood pressure. A fall in blood pressure was noted in all 24 cases. A decrease in heart rate and blood pressure was also noted upon administration. Dilatation of the peripheral vessels takes place thus aiding in bringing about the low blood pressure. A decrease in muscle tension-area was noted in all cases. The correlation coefficient between blood pressure values under the influence of mecholyl and muscle tension areas was found to be 0.820, which is significant and shows a positive correlation. The muscle tension areas before and after the administrations of mecholyl was compared by the mean-difference statistical method. The decrease in muscle tension areas was found to be significant as $\frac{1}{2}P$ was less than 0.5 per cent, indicating the changes were due to the agent and not chance. This decrease in muscle tension areas is attributed to the low blood pressure which decreased the blood flow through the muscle, thus allowing the metabolites to accumulate and increase the susceptibility of the muscles to fatigue. There is capillary and arteriolar dilatation but with the accompanying cardiac slowing, the blood flow is too low to remove the metabolites formed during contraction, thus rendering the muscle more susceptible to fatigue. Mecholyl, in large doses, causes a slight reaction in skeletal muscle but it is believed that with small doses used in these experiments, there would be no effect on skeletal muscle.

A series of experiments to show the effect of vagal stimulation on blood pressure decrease was done. Because of the physiological strain

on the animal due to stopping or slowing the heart, which resulted in wide variations in pressure, it was decided to use another method to lower blood pressure.

The femoral artery was clamped at intervals of one to six minutes to show directly the effect of lack of blood to the stimulated muscles. The results show that there was a steady decrease in contraction areas of the stimulated muscles until at seven minutes, the muscle showed no response.

Twenty cats were subjected to approximately one hundred injections of adrenalin in a random series comprising three groups, each member of which was given a specific dosage of adrenalin. The concentrations selected to observe were arrived at by reviewing the literature. The groups selected consisted of (1) 25 intravenous injections of 1 cc. of 1:1,000 solution of adrenalin introduced into the external jugular vein by direct cannulation and washed into the vein with 5 cc. of saline; (2) 25 intravenous injections of 1 cc. of 1:10,000 solution of adrenalin washed into the vein with 5 cc. of saline; (3) 35 intravenous injections of 1 cc. of 1:100,000 solution of adrenalin was washed into the vein with 5 cc. of saline. Two minute tetanic contractions were obtained immediately after the administration of the drug. Either 5 minutes before or after the administration of the drug, according to random assortment, control contractions were obtained by stimulating the muscles in the same manner and for the same length of time as the contractions under the influence of the drugs and 5 cc. saline as a control.

Whenever concentrations of 1:1,000 and 1:10,000 were administered, the same blood pressure curve was obtained throughout all experiments. The 1:100,000 adrenalin solution gave a varied response. Twenty-seven of the cases showed a small blood pressure rise. One case showed no change in blood pressure. Four cases showed an extensive drop in blood pressure. All muscle areas obtained under the influence of the 1:1,000 adrenalin were smaller than the controls. This was evidently due to the fact that adrenalin, in this concentration causes constriction of all arterioles, capillaries, and, what is most important, the veins in the muscle vascular area. The constriction of the veins would therefore interfere with the blood coming from the muscle and bringing the metabolites with it that normally interfere with contraction. In all but four cases of the 1:10,000, the muscle contraction was decreased in a like manner to the 1:1,000. In the four cases, the muscle contraction areas were the same as the controls. With the 1:100,000 adrenalin, there was an increase in muscle contraction areas in all 35 cases. This was due to the fact that the increases in blood pressure apparently did not prevent the rapid removal of metabolites from the muscle but enhanced the removal of these metabolites. In the cases showing the fall or no change in pressure, the vasodilator component was reacting

to enhance the blood flow through the muscle vascular bed but the fall in pressure was not low enough to cause poor circulation through the muscle as was the case with the histamine and mecholyl. Adrenalin, in these concentrations would enhance the heart's action to prevent any great slowing of the blood flow.

It is concluded therefore that 1:1,000 and 1:10,000 doses of adrenalin bring about a rise of blood pressure but muscle contraction areas are decreased. This result is probably due to the constriction of arterioles, capillaries, and veins with the result that physiologic surface area of the muscle's vascular area is decreased and at the same time, the venous carriage of the metabolites from the active muscle is interfered with. Pitressin, on the other hand, while possibly decreasing the vascular surface area of the muscle, apparently does not act on the veins to interfere with the removal of blood from the muscle. It is also postulated that with pitressin, the increased muscle contraction areas are brought about by increasing the velocity of blood flow through the active muscles. In most instances, an increased blood pressure will mediate increased blood flow but blood pressure does not directly result in increased velocity as other factors such as the cross-sectional area of the vascular bed influences flow. Mecholyl and histamine, while they tend to increase the physiologic surface of the vascular bed of the muscles, lower the blood pressure and increase the cross section diameter of the entire vascular bed to such a degree that muscle nutrition is interfered with.

SUMMARY

A history was presented which relates the production and maintenance of skeletal muscle tone to stimulus frequency, anesthesia, and muscle vascularity.

A technique was presented, designed to investigate any positive or negative relationship between general blood pressure, as measured in the carotid artery, and muscle tone artificially produced by stimulating the gastrocnemius and soleus muscles *in situ*.

The results were analyzed statistically and the methods of analysis are presented.

A positive correlation between normal muscle contraction areas and blood pressure, as measured in the carotid artery, was shown. This was done by measuring the muscle contraction areas and the areas under the blood pressure with an engineer's planimeter. The values obtained, in square centimeters, were subjected to a statistical correlation analysis. The values for "r" were significant and indicated a positive correlation between muscle contraction and blood pressure, in the partly anesthetized, but otherwise undisturbed animal.

The blood pressure was lowered by means of mecholyl, and a posi-

tive correlation was shown between muscle contraction areas and blood pressure when a dilator operating through the peripheral vascular nervous system was used.

The blood pressure was lowered by histamine, and a positive correlation was shown between muscle contraction areas and blood pressure areas when a dilator operating directly on vascular smooth muscle was used.

The blood pressure was increased by pitressin, and a positive correlation was shown between muscle contraction areas and blood pressure areas when a constrictor operating directly on vascular smooth muscle was used.

The blood pressure was increased by doses of 1:1,000 and 1:10,000 epinephrine. Varied responses were obtained with 1:100,000 doses of epinephrine. A positive correlation was shown between muscle contraction areas and blood pressure areas when a constrictor operating through the peripheral vascular nervous system was used.

All muscle contraction areas which were subjected to changes in blood pressure brought about by the various agents were analyzed by the mean-difference method of analysis. The change from the normal was statistically significant, indicating that the change was due to the agents, not to chance.

It was noted that the correlation in all these experiments was not a 1:1 relationship between blood pressure areas and muscle contraction areas.

When the blood supply to the stimulated muscles was occluded the muscle contraction areas decreased steadily to a point of no response, indicating directly the effect of lack of blood supply on muscle activity.

Altering the blood pressure by means of polysaccharide-25 did not prove satisfactory as a method since the pressure responses were too variable.

Lowering the blood pressure by means of vagal stimulation did not prove satisfactory as a method, since pressures were too variable.

AN INVESTIGATION OF THE REACTION OF NITROSYL CHLORIDE WITH 1- AND 2-PENTENE

by MERRIAM ARTHUR JONES*

The most important use of nitrosyl chloride in organic chemistry has been in the classical studies in the terpenes. In this work, as well as in the earlier work involving simple olefins, the nitrosyl chloride was usually generated in the reaction mixture by the action of hydrochloric acid on isoamyl or ethyl nitrite. Except for work begun in this laboratory in 1937 and some recent developments reported in the patent literature, comparatively little attention has been given to the reaction of nitrosyl chloride *per se* with simple olefins. Since the branched-chain olefins, like the terpenes, give solid addition products with nitrosyl chloride, most attention has been concentrated on them. Straight-chain olefins, according to several investigators, react slowly with nitrosyl chloride and fail to yield solid products; instead, the reaction products were reported to be blue oils not further described.

The present study is a part of the general investigation concerning the reaction of nitrosyl chloride with olefins underway in this laboratory. Since only one straight-chain olefin—2-pentene—had been investigated and this one not exhaustively, further work involving straight-chain olefins was desired. Therefore, the present investigation was undertaken to study further the reaction of nitrosyl chloride with 2-pentene and also to study the reaction with 1-pentene.

The principal initial reaction products obtained in the reactions with nitrosyl chloride were 1-nitroso-2-chloropentane from 1-pentene and 2-nitroso-3-chloropentane from 2-pentene. Reverse addition of nitrosyl chloride, although not expected in the case of 1-pentene, might well have been expected in the reaction with 2-pentene to give 3-nitroso-2-chloropentane. However, no evidence of the latter compound was obtained, and no explanation to account for the absence of reverse addition has been found. It should be mentioned, though, that some reverse addition to 2-pentene may have occurred but the resulting product was not isolated because it was present in small proportions and had properties close to those of the normal product.

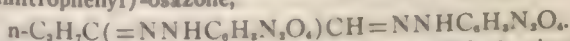
The addition of nitrosyl chloride to many olefins yields a white, solid bisnitrosochloride. Such a compound was obtained from 2-pentene. When the reaction of nitrosyl chloride with 2-pentene was carried out either in benzene or in the absence of an inert solvent, at temperatures generally below 0°, the solid bisnitrosochloride, bis-(2-nitroso-3-chloropentane), was obtained in yields as great as 18 per cent. However, in the reaction of nitrosyl chloride with 1-pentene, a solid bisnitrosochloride

* A.B. 1933, University of North Dakota; Ph.D. conferred November 11, 1950.

was not obtained. Another difference between the reactions of nitrosyl chloride with the two olefins was that the reaction with 1-pentene was apparently much slower than with 2-pentene. This conclusion was based on the observations that more heat was evolved in the experiments with 2-pentene and that the reaction mixtures became blue in much less time than those containing 1-pentene.

The mixtures from each of the olefins, after being heated to rearrange (isomerize) the nitroso compounds to the oximes, contained the carbonyl compounds as well as the expected oximes. Small amounts of water, hydrogen chloride, hydroxylamine hydrochloride, and ammonium chloride were also obtained on rearrangement as well as during the initial reaction. Therefore, some reaction occurred that yielded water.

On vacuum distillation of the rearranged mixtures obtained in the reaction of nitrosyl chloride with 1-pentene, 2-chloropentanal and 2-chloropentanaldoxime were obtained, leaving a fairly large residue which probably consisted to some extent of polymerised and condensed carbonyl and isonitroso compounds. Both of the 2-chloro compounds yielded the same osazone when treated in alcohol with 2,4-dinitrophenylhydrazine and sufficient hydrochloric acid. The same osazone was also prepared from the blue mixture as well as from the rearranged mixture. This osazone, referred to as osazone A, was, according to its analysis and in analogy with the osazone obtained in the work with 2-pentene, 1,2-pentanedione-bis-(2,4-dinitrophenyl)-osazone,



In order to prove the structure of the chloro aldehyde obtained from 1-pentene, the aldehyde was oxidized with concentrated nitric acid to 2-chloropentanoic acid. The properties of the product agreed with those of 2-chloropentanoic acid given in the literature. The acid was also obtained by oxidation of the blue mixture with fuming nitric acid. As a solid derivative, 2-chloropentanamide was prepared.

The dimethyl acetal was prepared from 2-chloropentanal, but the yield was low. In an attempt to account for a greater proportion of the starting materials in the reaction of nitrosyl chloride with 1-pentene, the rearranged mixture was employed in the preparation of the acetal without previously separating the aldehyde and aldoxime. However, the best result obtained was a 58 per cent yield of the crude dimethyl acetal.

2-Chloropentanal was also prepared by chlorination of pentanal which had been prepared by oxidation of 1-pentanol with dichromate and sulfuric acid. The properties of the synthetic 2-chloropentanal agreed with those of the chloro aldehyde obtained from 1-pentene. Furthermore, on being treated with 2,4-dinitrophenylhydrazine and sufficient hydrochloric acid, the synthetic compound yielded osazone A. The synthetic aldehyde was then oxidized by fuming nitric acid to 2-chloro-

pentanoic acid from which the amide was prepared. The resulting amide was then shown by means of mixed melting point determination to be identical with the amide of the chloro acid prepared by oxidation of the chloro aldehyde obtained from 1-pentene.

Much of the investigation concerning the reaction of nitrosyl chloride with 2-pentene was similar to that described for the reaction with 1-pentene. Thus, after removal of the solid bisnitrosochloride from the blue reaction mixture from 2-pentene, the blue solution was refluxed to rearrange the nitroso compound to the oxime. On vacuum fractionation of the rearranged mixture, 3-chloro-2-pentanone and 3-chloro-2-pentanonoxime were isolated. The yields of carbonyl and isonitroso compounds were much higher than in the reactions with 1-pentene. Further, from 74 to 94 per cent of the nitrosyl chloride was accounted for in the 2-pentene reactions. The forementioned chloro ketone and chloro ketoxime were also obtained when the bisnitrosochloride was rearranged by refluxing its benzene solution.

On being treated in alcohol with 2,4-dinitrophenylhydrazine and sufficient hydrochloric acid, the chloro ketone and the chloro ketoxime yielded identical osazones. This derivative, although insoluble in the usual solvents such as alcohol, acetone, chloroform, ethyl acetate, and benzene, was recrystallized as fine, red needles from dioxane containing 0 to 25 per cent water. Analysis and the fact that the same derivative was obtained from pentane-2,3-dione showed that this derivative was 2,3-pentanedione-bis-(2,4-dinitrophenyl)-osazone,

$$\text{C}_5\text{H}_7\text{C}(=\text{NNHC}_6\text{H}_3\text{N}_2\text{O}_4)\text{C}(=\text{NNHC}_6\text{H}_3\text{N}_2\text{O}_4)\text{CH}_3$$

This osazone, referred to as osazone B, was similarly prepared from the bisnitrosochloride, the blue mixture, and the rearranged mixture.

3-Chloro-2-pentanone was also prepared by chlorination of 2-pentanone, employing the method of Vladesco. The properties of the synthetic material agreed with those of the chloro ketone obtained from 2-pentene. Further, the synthetic chloro ketone yielded osazone B.

Since both the chloro ketone and the chloro ketoxime obtained from 2-pentene gave positive iodoform tests, attempts were made in the course of the work to utilize the haloform reaction to establish the structure of the compounds. However, although the expected haloform was obtained, the expected chloro acid could not be found.

The chloro compounds obtained in the reaction of nitrosyl chloride with each of the olefins were treated with piperidine to yield the corresponding tertiary amino compounds. Thus, from the chloro aldehyde and the chloro aldoxime from 1-pentene, 2-piperidylpentanal and 2-piperidylpentanaldoxime were prepared in poor yields. However, this phase of the investigation was discontinued in the work with 1-pentene because the structure of the chloro aldehyde was adequately established as described above and also because the yields of piperidyl compounds

were so low. On the other hand, the reaction of piperidine with the chloro compounds obtained from 2-pentene was rather extensively studied, because the structure of the chloro ketone and the chloro ketoxime could be more firmly established by studying the relatively more stable piperidyl compounds. Further, the yields of the piperidyl derivatives in this case were much better than those from 1-pentene. With regard to the structure of the chloro ketone and chloro ketoxime, it is clear that the preparation from these compounds of an osazone identical with that prepared from 2,3-pentanedione proved that the chlorine atom and the carbonyl or isonitroso function were on the second and third carbon atoms. However, these results did not establish the relative positions of the substituents. The fact that both chloro compounds gave strong iodoform tests indicated that the carbonyl or isonitroso function was on the second carbon atom, but the expected 2-chlorobutanoic acid could not be isolated. Therefore, since it is probable that 2-chloro-3-pentanone and its oxime would also give a positive iodoform test, confirmatory evidence of the structures of the chloro compounds was sought by studying the piperidyl compounds.

In the reactions with piperidine, the chloro ketoxime was found to react much more vigorously than the chloro ketone. The reaction of piperidine with the chloro ketone yielded a colorless mobile oil, 3-piperidyl-2-pentanone, from which a platinum salt was prepared. The reaction of piperidine with the chloro ketoxime yielded a colorless, viscous liquid, 3-piperidyl-2-pentanoneoxime, having the consistency of honey. It turned light yellow immediately on contact with air. The piperidyl ketoxime was also prepared by the reaction of piperidine with the bisnitrosochloride. As a derivative, the hydrochloride of the piperidyl ketoxime was prepared. The piperidyl ketoxime was shown to be the oxime of the piperidyl ketone by transforming the compounds one to the other. Thus, the piperidyl ketone, on being treated with hydroxylamine hydrochloride in the presence of pyridine and absolute alcohol, was converted to the piperidyl oxime. The reverse reaction was effected by converting the piperidyl ketoxime to the ketone by the action of formaldehyde and hydrochloric acid and also by hydrolysis of the ketoxime with sulfuric acid.

The blue mixture obtained in the reaction of nitrosyl chloride with 2-pentene was also treated with piperidine. In this manner both the piperidyl ketone and piperidyl ketoxime were obtained. In this connection, an experiment was carried out to test two methods of utilizing the blue mixture. One procedure consisted of refluxing the blue solution with benzene followed by distillation of the chloro compounds. The other procedure consisted of treating the blue solution with piperidine followed by distillation of the piperidyl compounds. The results showed that more product was obtained by the rearrangement procedure, but

that a greater proportion of the product in the form of the oxime was obtained by the procedure involving treatment with piperidine. Further, the foregoing results showed that rearrangement yielded a fair proportion of carbonyl compound along with the chloro ketoxime. On the other hand, treatment with piperidine yielded a relatively small proportion of piperidyl ketone as compared to the amount of piperidyl ketoxime. Somewhat similar results were noted previously with regard to the bisnitrosochloride. That is, when the bisnitrosochloride was refluxed in benzene solution, both the chloro ketone and the chloro ketoxime were produced, but when the bisnitrosochloride was treated with piperidine, only the piperidyl ketoxime was obtained. These findings suggest that the reactions resulting in the formation of water and carbonyl compound observed in the reaction of nitrosyl chloride with each of the olefins did not involve free nitrosyl chloride. More likely, the water and carbonyl compound arose from some reaction involving the monomeric nitrosochloride.

The compound, 3-piperidyl-2-pentanone, was also prepared by the reaction of piperidine with the synthetic 3-chloro-2-pentanone which had been prepared by chlorination of 2-pentanone. By comparison of properties and by mixed melting point determinations of the platinum salts, the synthetic piperidyl ketone was shown to be identical with the piperidyl ketone obtained from 2-pentene. The synthetic piperidyl ketone, on being treated with hydroxylamine hydrochloride in the presence of pyridine, was converted to the piperidyl ketoxime. By comparison of properties and by means of mixed melting point determinations of the hydrochlorides, the synthetic piperidyl ketoxime was shown to be identical with the piperidyl ketoxime obtained from 2-pentene.

In order to establish the position of the piperidyl group in the piperidyl ketone and the piperidyl ketoxime, several reactions were tried. To this end, attempts were made to carry out a Beckmann rearrangement of the piperidyl ketoxime; however, the results were inconclusive. Also, attempts were made to utilize the haloform reaction employing the piperidyl ketone; again the results were inconclusive. To show that the piperidyl ketone and the piperidyl ketoxime were not the 4-piperidyl compounds that would result from removal of the elements of hydrogen chloride followed by addition of the amine to the double bond, attempts were made to prepare 4-piperidyl-2-pentanone by treating ethylidene acetone with piperidine. Here, again, the evidence was not conclusive. Finally, however, the position of the piperidyl group was established by converting the piperidyl ketone to the thioketal and reducing this with activated Raney nickel to 3-piperidylpentane. The identity of the latter was established by comparing its hydrochloride with that of 3-piperidylpentane prepared by treating 3-chloropentane with piperidine.

The piperidyl oximes obtained from both 1-pentene and from 2-pentene

were reduced by sodium and alcohol to the diamines. Thus, 2-piperidyl-pentanaloxime yielded 2-piperidyl-1-aminopentane and 3-piperidyl-2-pentanoxime yielded 3-piperidyl-2-aminopentane. As derivatives of these diamines, the phenylthioureas were prepared. The preparation of these diamines illustrates an interesting series of reactions that may be useful in the synthesis of such compounds.

Finally, the results of this investigation may be summarized as follows:

1. The principal products of the reaction of nitrosyl chloride with both 1-pentene and 2-pentene were found to be those resulting from addition.
2. Seventeen new compounds were prepared and characterized in the course of this work.
3. A method was devised for the preparation of 2,4-dinitrophenyl osazones from certain chloro carbonyl compounds and their oximes.

PHYSIOLOGIC EFFECTS OF THE TUMOR-NECROTIZING BACTERIAL POLYSACCHARIDE OF SHEAR

by WILLIAM ELIAS POEL *

The objective of cancer chemotherapy has been the development of chemical treatments which may ultimately be of clinical use, perhaps, in combination with surgery and radiation. Chemical agents have been sought which are capable of damaging neoplasms selectively without serious injury to the host. Although no specific tumor destroying agent has yet been found, and no chemical is known which will cure even one kind of cancer and permit prolonged survival of the host, selective destruction of cancerous tissue has been achieved to a limited extent. This may be due to the greater susceptibility of rapidly proliferating neoplastic cells to irradiation therapy, nucleotoxic poisons, interference with intra-cellular metabolism, etc.

A number of substances, when administered to tumor-bearing animals, affect the tumor adversely. Work with some of these has reached a stage where their clinical application has become possible in favorable cases, with a resultant prolongation in survival time of the patient. Among these are the sex hormones, nitrogen mustards, urethane, folic acid antagonists, and some radio-active isotopes. Although these agents do not provide a cure even under the most favorable conditions, and their therapeutic effects are temporary at best, they do offer benefits even at this early stage in the development of cancer chemotherapy.

Other substances which possess tumor necrotizing activity have had limited clinical application as yet. These substances in general, have poor therapeutic ratios, lack specificity in their action, or have dangerous side effects.

The Shear polysaccharide, one of the most specific and potent agents yet studied for the chemical treatment of certain neoplasms in experimental animals, is included in the latter category at the present time, because of its drastic side effects. This substance is a bacterial fraction extracted from culture filtrates and from the bacterial bodies of *Serratia marcescens*. It has had several limited clinical trials as a chemotherapeutic agent, and has been found to precipitate toxic systemic reactions in patients even when administered in doses too low to elicit any significant therapeutic benefit. Continued interest in the polysaccharide as a chemotherapeutic possibility is warranted, however, by experimental evidence which indicates that a number of the toxic effects of the drug are apparently not related to its tumor necrotizing potency. The necessity for basic studies to help resolve many of the problems

* A.B. 1937, Brooklyn College; Ph.D. conferred November 11, 1950.

bearing on the physiologic, pharmacologic, and toxic effects of the Shear polysaccharide are thus evident.

The purpose of the present communication is to present exploratory studies of the effect of the polysaccharide on the arterial blood pressure and upon the leukocytes in circulating blood. Toward that end, this dissertation presents a description of studies conducted and significant results obtained, and discusses observations which may help clarify the physiologic bases of systemic reactions to this potent chemotherapeutic possibility.

HISTORICAL

Early attempts to treat malignant tumors by means of induced bacterial infections were apparently prompted by observations of cancer regression after spontaneous infections. Clinical observations in the literature of the effects of certain bacterial infections on tumors in human beings were reported as early as 1866. Later workers investigated the use of crude bacterial toxins instead of live organisms for their potential therapeutic value. It is historically interesting to note that many of those early chemotherapeutic attempts antedate the discoveries of radium (1898) and X-ray (1895).

Notwithstanding an early beginning, chemotherapeutic studies did not progress as did those involving radium or irradiation therapy. For example, the separation of the tumor necrotizing fraction from toxic and inert contaminants present in crude bacterial extracts was not achieved until 1936. At that time Shear and Andervont obtained concentrates from the filtrates of broth cultures of *Escherichia coli* (*B. coli*) rich in polysaccharides, almost negative in protein fractions, and capable of producing hemorrhage and necrosis in mouse sarcoma 37 in doses as low as 0.4 microgram per mouse. Later communications by Shear and co-workers reported the isolation of a similar, tumor-necrotizing fraction from *Serratia marcescens* together with proof of its polysaccharide nature and many of its chemical and physical properties.

Initial studies, including physiologic reactions of mice to the tumor-necrotizing polysaccharide from *Serratia marcescens*, were reported by Shear and Perrault. Chief among the obstacles first reported by them limiting the use of this polysaccharide as a chemotherapeutic tool were: its toxicity, manifested by prostration, diarrhea, decreased muscle tone, and disturbance of the temperature regulating mechanism; and the development of resistance in the host to the physiologic and cytotoxic effects of the drug after the first injection.

Prostration, dyspnea, diarrhea, and disturbance of the temperature regulating mechanism, have been observed in all mammals studied for their reactions to polysaccharide. The disturbance of temperature regulation is characterized by pyrexia in the rabbit, dog, and human. The lack of a causal relation between pyrexia and tumor-necrosis was sug-

gested by the reaction of the mouse, in which polysaccharide produced marked tumor necrosis in spite of hypothermia.

The specificity of the Shear polysaccharide for malignant cells was indicated by the work of Diller. She reported that the amount of polysaccharide required to produce destruction of non-cancerous tissue was approximately ten times that effective in producing destruction of tumor cells.

Leukocytosis after polysaccharide was observed in the mouse (Algire) and human. One investigator (Oakey), in a short summary of the reactions of nine patients to the Shear polysaccharide, mentioned that the leukocytosis was preceded by a leukopenia. The observations on rats and rabbits reported in this communication parallel those of Oakey on the human, and broaden the significance of the leukopenia-leukocytosis sequence, suggesting the advisability of further study of the adrenal in the physiologic reactions to the Shear polysaccharide.

Franke, in the dog, and other workers, in the human, reported a fall in blood pressure to shock levels after parenteral administration of the bacterial polysaccharide. Algire, in discussing the effects of this substance on circulation, pointed out that there is a difference between the shock-like state it induces and the shock condition following trauma. By means of the transparent chamber technique, he observed that the arterioles after polysaccharide are markedly dilated, whereas in traumatic shock they are constricted. The studies herein reported indicate another striking difference between traumatic or surgical shock and the state of physiologic depression following polysaccharide. The severe drop in blood pressure which characterizes other conditions of shock occurred only as a transient phenomenon or was absent entirely after polysaccharide. The blood pressure drop within the first few hours was met only as a transient phenomenon under special conditions in the dog and rabbit, and not at all in the rat, even though other symptoms of shock such as prostration, cyanosis, increased circulation time, and sinus tachycardia were present.

PHYSIOLOGIC EFFECTS OF THE SHEAR POLYSACCHARIDE

Effects on Blood Pressure

Method.—Two polysaccharide preparations were studied for their effects on blood pressure of dogs, rats, and rabbits. The preparations were generously supplied by Dr. Shear of the Chemotherapy Section, National Cancer Institute, and are identified by their designations, "P-20" and "P-25". These stand for the polysaccharide isolated from the *Serratia marcescens* culture filtrate, and from the bacterial cell body, respectively. Surgical anesthesia was induced and maintained in the experimental animals with nembutal (pentobarbital sodium), or urethane (ethyl carbamate). Following anesthesia, the trachea was dis-

ected out, cannulated and connected to a tambour for the recording of respiration on a smoked drum kymogram. The carotid artery was freed of its sheath, cannulated for the purpose of recording blood pressure, and connected to a "U" shaped mercury manometer having a conventional type float and writing arm in the open end of the manometer. The jugular vein in the rabbit, or the femoral vein in the dog, was cannulated and connected to a calibrated burette full of saline. All subsequent infusions of polysaccharide, saline, anesthetic, test drugs, etc., were made by injecting the material into the rubber tubing connected to the venous cannula and washing it in with saline from the reservoir.

A later modification in operative procedure employed plastic tube cannulas for permanently exteriorizing the carotid and jugular vessels in heparinized rats. This modification made possible the intravenous infusion of polysaccharide and the direct recording of blood pressure, approximately 24 hours after anesthesia and operation. It was thus possible to observe and record blood pressure variations, uncomplicated by the systemic effects of previously administered anesthetics, surgical trauma, or physical restraint.

Experimental Findings.—A typical response was observed in nembutal anesthetized rabbits and dogs after the infusion of P-20. The reaction consisted of a sharp and drastic drop in arterial pressure to approximately half its former level within 20 to 40 seconds after injection of the drug, followed by a return of blood pressure to the pre-polysaccharide range approximately 15 minutes later. An apparent resistance on the part of the organism to the vaso-depressor action of subsequent doses was observed immediately after the return of blood pressure to control values.

The response of the animal to drugs such as adrenaline, pitressin, acetylcholine, and histamine was not affected after injection of the Shear polysaccharide regardless of the size or number of polysaccharide doses infused. Similarly, unaltered characteristic responses were obtained after the bacterial polysaccharide on stimulating the cardiac depressor nerve, intact right and left vagi, central and peripheral ends of the sectioned right vagus, and sciatic nerve.

The reaction of nembutal-anesthetized dogs to the intravenous injection of either P-20 or P-25 was similar to that described above for the animal after P-20. The first infusion of either polysaccharide preparation produced an almost immediate drop in blood pressure, which was followed by a progressive return to normal limits. Subsequent infusions of either preparation showed that a depressor type of tachyphylaxis had been produced by the first injection.

In the nembutal-anesthetized rabbit, an abrupt blood pressure drop after P-25 was observed in only one out of five animals, as compared with five out of five deeply anesthetized rabbits given P-20. The

capacity of the anesthetic to alter the vaso-depressor phenomenon observed was indicated by urethane anesthesia, as compared with nembutal prior to the administration of the bacterial polysaccharide. Vasomotor depression, as evidenced by an immediate drop in blood pressure after infusing P-20 into a nembutal anesthetized rabbit, occurred only in one out of every four animals given P-20 after urethane, and in none of the urethanized animals given P-25.

Both in the dog and the rabbit, where initial vasomotor depression was recorded after polysaccharide, the blood pressure eventually returned to and stabilized itself within the range of pre-polysaccharide fluctuations, regardless of the number of doses or size of dose administered. This was found to take place even when the total amount of polysaccharide infused was several times the known lethal dose for an intact animal.

In the non-anesthetized rat with exteriorized carotid and jugular tubes, toxic and even lethal doses of P-25 had no apparent effect on the blood pressure, even though other signs of toxicity were strikingly evident (i.e., cyanosis, dyspnea, tachycardia, comatose unresponsiveness, diarrhea, etc.).

Discussion.—In standard text books of pharmacology or physiology, the term "tachyphylaxis", i.e. rapid protection, refers specifically to the decreasing responsiveness of an animal to repeated injections of pressor agents, such as ephedrine, pitressin, and crude extracts of normal kidneys containing renin. Apparently, this term has not been applied previously to denote a decreased responsiveness to repeated injections of a depressor substance, specifically one of a polysaccharide nature. Possibly, this was due to an inability to elicit a depressor tachyphylactic reaction. With the demonstration that at least one substance, the Shear polysaccharide, is capable of eliciting that sort of physiologic response, the term "tachyphylaxis" is reconsidered in a broader sense, as a general term which may be used in referring to certain depressor as well as pressor reactions.

These studies also suggest that the administration of a sedative or anesthetic with intrinsic vaso-depressor characteristics may result in a synergized depression of blood pressure after polysaccharide. That this point has heretofore not deterred clinicians from using potential vaso-depressor agents as sedatives prior to polysaccharide administration is shown in their communications dealing with the clinical exploration of the drug.

A comparative study of two polysaccharide preparations, P-20 and P-25, indicates that for P-25 the lethal dose range in the rabbit is considerably higher, and the blood pressure depressing effect far less drastic than it is for P-20.

An impression has been gained from these exploratory experiments with the Shear polysaccharide that the factor of shock and blood pres-

sure depression, so alarming when present in the human, is not a prime lethal factor in the rabbit, rat, or dog. In the dog and rabbit, the initial and secondary blood pressure depressions resulting from even lethal doses of the polysaccharide are followed by a return of the pressure to the pre-polysaccharide range. In the cannulated, non-anesthetized rat, preliminary findings indicate no blood pressure drop, either initially or secondarily, even after lethal polysaccharide doses.

To date there are no reports in the literature which conclusively define the role of shock in the production of tumor necrosis. Algire believes that tumor destruction in the mouse is secondary to anoxia with resultant capillary stasis, while Diller suggests a direct cytotoxic effect of the Shear polysaccharide on tumors. By means of the technique used to measure the blood pressure directly in non-anesthetized rats, further studies are planned to ascertain whether a cause-effect relation exists between a shock-like depression of blood pressure and tumor necrosis. If the production of shock is found to be essential for the destruction of malignant cells, then further studies will be necessary to determine how to produce and control the polysaccharide "shock-like" state which the clinician views so fearfully today. If, on the other hand, it is demonstrated that shock, like pyrexia is merely a drastic side effect with no essential role in producing destruction of cancer cells, it will be obvious that prime emphasis in future studies must be laid on ways and means of reducing or eliminating the vaso-depressor effects of this polysaccharide.

Toxicity

Detailed toxicity studies of the Shear polysaccharide in the rat and rabbit were not made during the course of this work. Nevertheless the over-all reactions of the animals to different dose levels indicated, roughly, that the maximum non-lethal intraperitoneal dose of P-25 in the rat was 3 gamma per gram of body weight while the maximum intravenous dose which could be tolerated by the rabbit was 1 gamma per gram. These approximations of maximum tolerable doses pertain to experiments at room temperatures not exceeding 26° C. Fatalities were experienced at these and lower dose levels when the room temperature increased to 28° C. or above.

In contrast to the vaso-depressor activity of the polysaccharide, which varied with the species of animal and was influenced differently by different anesthetics, other toxic reactions were produced uniformly in all three of the animal species studied. These included transient leucopenia followed by polymorphonuclear leucocytosis and relative lymphopenia, diarrhea, pyrexia, pulmonary congestion, tachycardia, cyanosis, anoxia, and prostration. The demonstration of the same symptoms in the three different species studied, as well as in man, strongly suggests a common, underlying mechanism of action. In contrast to the state of "shock"

and blood pressure depression which appears to be the most outstanding toxic manifestation to the clinician, prostration, and pulmonary congestion and edema were the foremost toxic signs in the experimental animals. The signs of pulmonary congestion and edema, previously observed in debilitated cancer patients after polysaccharide, have been attributed clinically to infusions of saline, blood, and plasma, pyrogenic reactions, heart failure, and the destructive effects of the Shear polysaccharide on pulmonary metastases. Observed in apparently normal, non-tumor bearing animals, after the parenteral administration of polysaccharide alone, pulmonary edema appears to be a toxic sequel to the administration of the drug. It is suggested that the development of marked pulmonary edema per se may be capable of eliciting most of the other toxic signs noted; i.e., dyspnea, tachycardia, congestive heart failure, cyanosis, and prostration. Further work may show to what extent severe pulmonary edema is capable of producing these effects.

Variations in the Total and Differential Leukocyte Count Induced by the Shear Polysaccharide

Material and Methods.—Changes in the circulating blood involving the leucocytic cells were studied in Dutch and New Zealand rabbits and in young adult Osborne-Mendel rats. The polysaccharide or saline control solution was injected intraperitoneally into the rat and intravenously into an ear vein of the rabbit. Blood samples before injection and periodically after injection were obtained from the ear vein of the rabbit and from the tail of the rat. Standard procedures were used in all blood studies. Wright-Giemsa stain was used for the differential slides.

Experimental Findings.—In contrast to the leucytosis described in published reports, the injection of either P-20 or P-25 in the present experiments produced an initial severe leucopenia which began within 15 minutes after administration of the drug and reached a point of maximum depression within three to four hours. A reversal of this trend began thereafter and continued on toward leucocytosis, in which the highest count exceeded twice the pre-polysaccharide count in the rabbit.

Differential counts showed that both the granulocytes and agranulocytes were involved in the leucopenia and leucocytosis, but not to the same extent. The neutrophil variations contributed more to both stages than did other leukocytes in the rabbit. Neutropenia was seen within 15 minutes after polysaccharide and was followed by neutrophilia in less than 5 hours. Variations in the count of circulating lymphocytes paralleled those of the neutrophils; although the extent of their change was not so extreme, the onset of lymphopenia tended to lag behind the onset

of neutropenia, and the lymphocytosis following leukopenia was more apparent than real.

In the rat, after the initial leukopenia stage, an absolute leukocytosis was usually either mild or absent. The second stage was marked instead by a striking polymorphonuclear leukocytosis, accompanied by a continued lymphopenia. In general, however, similar patterns of reaction to the drug were observed in the leukocyte picture of both animals.

A mild normoblastosis was observed in the rabbit and rat several hours after polysaccharide administration. The appearance of several normoblasts per hundred leukocytes was recorded after the systemic reactions to the polysaccharide were apparently most profound. In the absence of hemolysis or other indications of red cell destruction this reaction appeared to be a response to the generalized anoxic state of the animal.

Discussion.—The common reaction pattern evident in the changes in circulating blood of the rat and rabbit after polysaccharide, the profound general depression or prostration of the animals while under the immediate influence of the drug, and the previously mentioned toxic manifestations in the injected animals—all these changes strongly suggest and characterize a "non-specific stress reaction." Whether the adrenal is an essential intermediate in producing the blood changes or the other reactions to the drug is a problem that may be clarified by further experimentation. That the leukocyte changes are mediated by a systemic mechanism and are not due to a direct destructive action of polysaccharide on the hematopoietic centers is suggested by the pattern of leukopenia, followed by polymorphonuclear leucocytosis and relative or absolute lymphopenia in all animals, regardless of the amount of polysaccharide injected or the ability of the animal to survive the consequences of the injection. The observations herein reported suggest that further study of the adrenal in the reaction of an animal to the Shear polysaccharide is well worth undertaking. They also suggest that, of the entire aggregate comprising the crude bacterial extract, the polysaccharide fraction isolated by Shear is capable, per se, of eliciting the non-specific systemic phenomena which Selye termed the "Alarm Reaction".

SUMMARY

The untoward systemic reactions which preclude the clinical use of the Shear polysaccharide as a chemotherapeutic agent emphasize the need for basic studies of its physiologic and pharmacologic effects. When the primary actions of the drug responsible for tumor necrosis are distinguished from those responsible for toxic side effects, the elimination of the undesirable effects may be undertaken with a greater likelihood of success. Towards that end, this dissertation describes exploratory

studies on the effect of the Shear polysaccharide upon the arterial blood pressure and upon the leukocytic cells in circulating blood. Observations are presented and discussed which tend to clarify the physiologic bases of systemic reactions to this drug.

CONCLUSIONS

1. A severe drop in blood pressure has been reported heretofore as one of the serious toxic effects of the Shear polysaccharide in man. These studies indicate that it is only a transient, reversible phenomenon in the dog and rabbit. Preliminary studies suggest that it is not encountered at all in the non-anesthetized rat.
2. Blood pressure depression after the injection of the Shear polysaccharide in the rabbit appears to be synergized by the preceding administration of pentobarbital sodium.
3. Tachyphylaxis to a vaso-depressor phenomenon is described. This was observed after recovery of blood pressure, following the initial injection of the Shear polysaccharide into rabbits and dogs. Apart from immediate interest in this observation in relation to the systemic effects of the bacterial polysaccharide it indicates the usefulness of extending the meaning of the term "tachyphylaxis" to include certain depressor phenomena.
4. The sum of all the observed toxic effects and physiologic phenomena elicited by this drug in the rat and rabbit suggests the "Alarm Reaction". Conversely, these studies also suggest that the "Alarm Reaction" may be precipitated by the bacterial polysaccharide, per se. The evidence for this concept is presented and discussed.

A STUDY OF THE METABOLISM OF D (—) ARABINOSE IN THE RABBIT

by EUGENE WORTHINGTON RICE*

The five carbon sugars, the pentoses, are widely distributed in the vegetable kingdom either in the free state, or, more frequently, in a combined form in gums, hemicelluloses, pectic materials, and bacterial polysaccharides. In both plant and animal tissues D-ribose, and 2-desoxy-D-ribose are universally found as constituents of the nucleic acids. Ribose is likewise a component of cellular mono and dinucleotides.

Carbohydrates, in general, are oxidized by the animal as a source of energy, transformed to glycogen, or converted into fat. Of these various processes, glycogenesis and glycogenolysis occupy a central position. The foundations of the study of carbohydrate metabolism were laid by Claude Bernard (1813-1878). Since the time of Bernard, the metabolic fate of ingested carbohydrates has been very extensively studied.

The carbohydrates of the usual diet consist of celluloses and pentosans, which are unassimilable by man, polysaccharides and disaccharides which are absorbed from the gastrointestinal tract after they have been hydrolyzed by the digestive processes into monosaccharides, and preformed monosaccharides that are absorbed unchanged. The principal monosaccharides formed during digestion are glucose, fructose, and galactose. Mannose and pentoses are available in foods only in relatively small quantities.

The removal of absorbed sugars from the blood stream is the resultant of at least five variable processes.

1. Simple diffusion through the body fluids.
2. Conversion to glycogen by the liver and the tissues.
3. Removal by the kidneys.
4. Conversion to fat.
5. Oxidation of the carbohydrates.

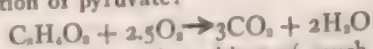
The utilization of glucose involves, in general, the following steps:

1. Monosaccharides are phosphorylated and transformed into glycogen.
2. Glycogen is phosphorylated and transformed into fructose-diphosphate.
3. Fructose-diphosphate is split into two molecules of triose-phosphate.
4. In a series of transformations pyruvic acid is formed.
5. Pyruvic acid is reduced to lactic acid.

Numerous enzymes are necessary for these transformations as well as a coenzyme and two phosphate carriers. Several inorganic ions are also indispensable.

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The major amount of energy is liberated during the oxidation of the glycolytic end products. This second phase of the degradation of glucose to carbon dioxide and water is an aerobic process by which pyruvic acid is oxidized. The over-all result of the tricarboxylic acid cycle is the complete oxidation of pyruvate:



Although pentoses have been the subject of much investigation, little is actually known of their role in plant and animal physiology. Concerning the metabolic fate of pentoses in animals, one thing seems certain: if they are utilized they are not utilized to the same extent nor in the same manner as commoner hexoses. In general, the pentoses have been thought to pass into the tissues by diffusion where they are more or less unavailable to the animal for metabolic purposes and for this reason are excreted slowly.

These aspects of biochemistry offer numerous unsolved problems, and hence it was thought desirable to reinvestigate the metabolic fate of pentoses in animals by means of *in vivo* studies. D-arabinose was the pentose chosen for investigation.

The present report is the results of a study of D-arabinose metabolism in the rabbit. In particular, this work was planned to follow arabinose tolerance and glycogenesis along with the study of some intermediate blood metabolites to determine whether this carbohydrate is involved in the known carbohydrate cycle.

D-arabinose is encountered rarely. Aloin glycosides and tubercle bacilli are known natural sources of this sugar. It is best made in the laboratory by the oxidation of calcium gluconate by hydrogen peroxide and ferric sulfate. The resolution of D, L-arabinose into the component isomers is accomplished by fractional crystallization of the active methylhydrazones.

The analytical methods used in this study are standard recognized procedures. The pentose method was developed by the author and is particularly well adapted to the type of metabolic studies that are reported. The first problem investigated was the blood and tissue levels of arabinose after oral administration. The free pentose content of the tissues of control fasting or fed rabbits was found to be nil. After arabinose feeding, the concentrations of total sugar and non-fermentable reducing substances reached a peak in about one hour and returned to the pre-ingestion levels in about six hours. The pentose level paralleled the nonfermentable fraction and was at an essentially zero value in about six hours. There was not a detectable shift of pentose into fermentable substances. A gradual decrease in the arabinose in the intestinal tract was observed, only 2 per cent of the dose remaining nine hours after administration. Only traces of free pentose were found in the body tissues at the one and two hour intervals after administration. Arabinose

appeared in the urine early in the experiment. The total urinary excretion was less than 10 per cent of the amount administered in all cases. The rabbit, therefore, does not retain this sugar in the tissues and excretes it slowly in the urine. Additional experiments showed that the arabinose is not stored in the tissues, nor excreted in the urine in a loosely bound form.

Since the preliminary studies showed that D-arabinose undergoes a metabolic transformation, a study was made of liver glycogen formation following administration of this carbohydrate.

Statistical analysis of the data showed that the mean increase in liver glycogen following D-arabinose is significantly greater than that obtained with saline administration ($t = 3.5$, $P < 0.01$). But D-arabinose must be considered a poor glycogen-former in comparison with glucose, since the mean increase in liver glycogen after administration of the latter sugar is significantly greater than that obtained with D-arabinose ($t = 9.1$, $P < 0.01$).

The third phase of this work was a study of the effect of D-arabinose administration on blood lactate and keto acids levels, since it is known that glucose, galactose, and fructose give rise to increased blood lactate and pyruvate under basal conditions. Analysis of variance showed non-significant variations in the hourly values for blood lactate and keto-acids when saline was injected. After glucose injection there was a highly significant variation ($P < 0.01$) in the tests for blood lactate and a moderately significant variation ($P < 0.05$) in the blood keto-acid values. When D-arabinose was injected the tests were moderately significant for blood lactate ($P < 0.05$) and non-significant for blood keto-acids. The observation that glucose gives rise to only moderately significant changes in the blood keto-acids indicates that this procedure is not a sensitive method for measuring carbohydrate degradation. The negative findings with blood keto-acids after D-arabinose administration might therefore reflect the use of a method of low sensitivity.

The preceding data present unequivocal evidence to show that D-arabinose is metabolized by the rabbit, and suggestive, but not rigorous, evidence that this sugar gives rise to intermediates that enter known pathways of carbohydrate metabolism.

SUMMARY OF DISSERTATION
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1949

THE CLIFFORD REGULATIONS: A CASE STUDY IN ADMINISTRATIVE LEGISLATION

by JOHN BENJAMIN OLVERSON *

The Supreme Court's decision in *Helvering v. Clifford*, 309 U. S. 331 (1940) represents another example of a futile effort on the part of taxpayers to find ways to reallocate their income to benefit themselves tax-wise and at the same time realize economic benefits flowing from such income. The case involved a five-year trust created by the grantor for the benefit of his wife. At the end of five years or upon the earlier death of either the grantor or his wife, the trust corpus would revert to the grantor or his estate. The grantor established himself as trustee with broad powers to pay out or accumulate the income and to manage the trust property practically without limitation or control. The Supreme Court ignored the "niceties of the law of trusts" and held that the grantor had retained "substantial ownership" and hence was taxable on the trust income under Section 22(a) of the Revenue Code.

The Courts decision rested on the fact that there existed a multiplicity of factors which "lead irresistibly to the conclusion that respondent continued to be the owner" of the trust corpus. Three factors were considered: (1) the short duration of the trust; (2) the fact that the wife was the beneficiary; and (3) the retention of control over the corpus. Of particular significance is the Court's statement that "no one fact is normally decisive but that all considerations and circumstances of the kind we have mentioned are relevant to the question of ownership and are appropriate foundations for findings on that issue." Another pertinent observation was the Court's admission that Congress had adopted no "rule of thumb" for taxing short term trusts but accepted the coverage of such trusts under the broad language of Section 22(a), the result of which, in its opinion, left "to the triers of fact the determination of whether or not on the facts of each case the grantor remains the owner. . . ."

Since every court decision usually conveys a rule, we have a right to expect that a rule exists in the *Clifford* decision. But what might that rule be? May the decision be reduced to a definite formula the application of which to any set of facts will resolve all of the Clifford-type trusts?

The *Clifford* decision is not reducible to a definite formula which will resolve any case to which it applies. The nature of the decision makes it impossible to state other than a general rule. The Circuit Court decisions interpreting the decision provide only illusions of a *Clifford* rule—a nebulous clue that such a rule exists. One court was frank to admit

* B.S. 1947, American University; LL.B. 1939, LL.M. 1941, Georgetown University; S.J.D. conferred June 1, 1949.

that the *Clifford* decision "has proved the starting point of a fertile proliferation, out of which no definite doctrine has emerged, or in the nature of things could emerge." *Hyman v. Nunan*, 143 F. (2d) 425, 427 (C.C.A. 2d, 1944).

Of all the Circuit Court decisions interpreting the *Clifford* decision, not one has employed a single factor approach to taxing trust income to the grantor as "substantial owner". Every attempt to isolate the short term factor or the control factor was rejected. On the other hand, the cases agree that the question of "substantial ownership" is one of degree. They are also in substantial agreement that the length of the trust, the relationship of the grantor to the beneficiary, and the control retained by the grantor are the most important general factors. The underlying rationale is that the court must look to the whole nexus of powers reserved by the grantor to determine whether they so nearly approached full dominion as to be its equivalent. A substantial majority of the later decisions treated the *Clifford* problem as presenting a factual situation and hence Tax Court decisions which are supported by evidence should not be disturbed on appeal.

An analysis of the *Clifford* decision and the Circuit Court cases interpreting it leads to but one conclusion which is that the question of "substantial ownership" is one of degree. It either exists or does not exist depending upon all of the attendant facts and circumstances. Hence, there is no definite *Clifford* formula which will fit every *Clifford*-type trust any more than there is a precise formula which will resolve every negligence case.

In the absence of any definite formula supplied by Congress, the Treasury promulgated the *Clifford* regulations for the stated purpose of removing the confusion which had resulted from the *Clifford* decision. The regulations set down precise tests for determining when a grantor has retained substantial ownership whereas the courts provided only general tests. They drew an arbitrary line between a short term and a long term trust by providing that the income of a trust is taxable to the grantor "where the grantor has a reversionary interest in the corpus or the income therefrom which will or may reasonably be expected to take effect in possession or enjoyment—(1) within 10 years commencing with the date of the transfer". This provision not only attaches particular significance to a ten-year trust for which there is no judicial precedent, but it also isolates the term as a single factor in determining "substantial ownership". The cases have entirely rejected any attempt to apply such a test. What the Treasury has done is analagous to a situation where a trial judge instructs the jury to disregard all the relevant facts in the case and merely look for the one fact which he has arbitrarily determined to be decisive of the issue. Typical of the language employed by the courts may be found in *Commissioner v. Buck*.

120 F. (2d) 775 (C.C.A. 2d, 1941) where the Second Circuit said (p. 778): "We must consider a variety of factors in drawing the line between taxability and nontaxability in this field where differences of degree produce differences in kind."

This provision has ignored the judicial approach which is to consider a multiplicity of factors with varying weight given to the various factors depending upon their relationships to one another and their setting in the trust agreement. But, as the Sixth Circuit has said: "No case has been brought to our attention which expressly holds that a short term of itself requires taxation of income to the donor". *Central Bank of Cleveland v. Commissioner*, 141 F. (2d) 352, 355 (C.C.A. 6th, 1944).

The underlying reasoning of the more recent decisions is that the factor of control is the most important of the various factors of ownership. Mr. Justice Learned Hand once stated that "the longer the term, the more important the reserved powers and vice versa." *Commissioner v. Elias*, 122 F. 171, 174 (C.C.A. 2d, 1941). Hence, the term of a trust ranging between ten and fifteen years is of relative unimportance. Consequently, the control must be very substantial and complete according to the cases. Any one of the three factors of control set out in the regulations supposedly represents "very substantial" and complete control. But again the cases do not follow this approach. "Substantial", "very substantial", and "complete" are relative terms. Also, there are varying degrees within each term. These concepts are reflected in the case law but not in the regulations.

The *Clifford* regulations were promulgated for the avowed purpose of removing the confusion and uncertainty resulting from the Supreme Court's decision in the *Clifford* decision and the many variations of interpretations of it by the Circuit Courts. In accomplishing this general purpose, they provide precise tests in contradistinction to the general tests adopted by the courts. As a part of the administrative regulatory process, the regulations represent an excellent case study of the exercise of rule making not only because of their inherent functional nature but also because of the constitutional and administrative law problems involved.

The regulations were promulgated under the Treasury's power to "prescribe and publish all needful rules and regulations for the enforcement" of the tax law. Although regulations promulgated under this power have been generally classified as part of the "rule making" process irrespective of their nature and function, they do not represent true "rule making" as a quasi-law making process. They are commonly referred to as interpretive regulations and should be classified as that part of the process incidental to the execution of the law. Their function should be limited to the interpretation of the terms and provisions of the statute for public guidance and to aid subordinate officers in the

enforcement thereof. They should not implement or create new law at the administrative level.

Sometimes, however, interpretation is carried beyond its limited function. If a regulation in effect embodies new rules of law which are not found in the statute or the court's interpretation of the statute, then it is legislative in character and is properly classed as a part of the "rule making" process.

The *Clifford* regulations represent an excellent illustration of administrative "rule making" under the guise of interpretation. Since such regulations as a whole are not founded on a specific delegation of legislative power to promulgate legislative rules and regulations within defined statutory limits with legal sanctions imposed for failure to comply therewith, they represent an unconstitutional exercise of legislative power in violation of the separation of powers.

Furthermore, the regulations are contrary to the general *Clifford* concepts adopted by the courts under the judicial power of Article III of the Constitution. If they do not represent a proper exercise of quasi-legislative power pursuant to a valid statutory delegation of rule making power, or an exercise of a power incidental to the administration and enforcement of the statutory authority delegated, their validity is questionable on the theory that they encroach upon the judicial power. If this is not a violation of the constitutional doctrine of the separation of powers, it would certainly appear to be contrary to its spirit.

Interpretive rules and regulations should be classified as a phase of the administrative process incident to the enforcement of statutory authority. They should not be classified as part of the rule making function. Rule making should be limited to rules and regulations of general applicability and future effect designed to implement or prescribe law or policy. All rules and regulations promulgated under the guise of interpreting or construing statutory terms or provisions but which actually implement or embody new law should be classified as part of the rule making function because of their legislative character.

It is evident that interpretation designed for the purpose of effectuating a statutory policy is very different from interpretation designed to implement statutory policy by prescribing new law. The former is an incident to the enforcement of the statute and is more appropriately classified as an administrative function; the latter, even though erroneously labeled as interpretation, embodies new law by enlarging the statutory policy and should be properly classified as a rule making or legislative function. Writers in this field, however, have ignored this distinction. They generally adhere to the unrealistic and arbitrary view that all rules and regulations, which are not prescribed pursuant to a specific delegation of legislative authority to implement or fill in the

details of a standard, are merely interpretive. That the converse is true is clear in the case of the *Clifford* regulations.

Sections 2 and 4 of the Administrative Procedure Act are out of step with reality. Section 2, in including every interpretive rule or regulation within the definition of "rule" is contrary to practical analysis as well as inconsistent with the remainder of the definition insofar as it relates to rules designed to "implement" or "prescribe law or policy." "Rules" should be defined to include only those rules and regulations which are truly part of the rule making process, *viz.*, legislative or substantive rules and regulations. If it is desired to retain interpretive rules in the definition, they should be also defined to embrace only those interpretive rules which implement or prescribe new rules pursuant to statutory delegations of power, whether general or specific. Moreover, the mere fact that a statutory delegation of power is general rather than specific, as in the case of sections 62 and 3791(a) of the Revenue Code, should not preclude the issuance of legislative or substantive regulations. Merely because the delegation is general should not of itself control in determining whether the statute contains adequate standards to limit or control administrative discretion. Section 22(a) of the Revenue Code, in defining "gross income", provides a good example of an adequate standard controlling or limiting administrative discretion and which should permit substantive or legislative regulations based on a general delegation of statutory power.

Section 4 of the Act is even more unrealistic. Again, without defining "interpretive rules", it excludes all such rules from the rule making process. Hence, the *Clifford* regulations, a perfect example of administrative legislation, are exempt from the procedural requirements of rule making. That this is a patent misunderstanding of the process is obvious. Any rule or regulation, regardless of its label, should be subjected to the rule making process if it implements or prescribes law. Section 4 should exclude only those rules, so-called "interpretive", which are issued as administrative interpretations and having for their purpose of construing statutory terms or provisions. Regulations of the *Clifford* type which actually embody new law should not be excluded from the rule making process.

A very simple rule should suffice to clarify future thinking in regard to the classification of rules and regulations. All rules and regulations, of general applicability and future effect, promulgated pursuant to either a specific or general delegation of statutory power and which rest on an adequate legislative standard or policy controlling or limiting the administrative discretion with respect to such rules or regulations should be classified as part of the rule making process. All other rules, rulings, opinions, announcements, etc., may then be properly classified as part of the incidental functions inherent in the administration of statutes.

SUMMARIES OF DISSERTATIONS
SUBMITTED FOR
THE DEGREE OF DOCTOR OF EDUCATION
1949 and 1950

THE PROGRAM OF THE OCCUPATIONAL INFORMATION AND GUIDANCE SERVICE, UNITED STATES OFFICE OF EDUCATION, 1938-1948

by JOHN FREDERICK BROUGHER •

PURPOSE OF THE STUDY AND SOURCES OF DATA

The purpose of this study is to outline the historical background for the establishment of the Occupational Information and Guidance Service and to present an interpretive review of the development of the Service. The study endeavors further to consider the outlook and to make recommendations.

The chief sources of data included interviews with the Chief of the Service and other staff members, interviews with other persons familiar with the history of the Service, publications of the Bureau and Office of Education, and the files of the Service.

HISTORICAL BACKGROUND—A HALF CENTURY OF DEVELOPMENT

The Occupational Information and Guidance Service in the Vocational Division of the Office of Education was established in the Summer of 1938. To those who had labored through the years for a national program of guidance this was the fruition of a dream which had long seemed unattainable.

The U. S. Office of Education was the logical agency in which guidance activities should be centered. The Office, and its predecessor, the Bureau of Education, had been closely identified with the guidance movement throughout its history. We have seen how many of the early publications were issued as Bureau bulletins and were thus subsidized and given nation-wide distribution. Meyer Bloomfield, one of the fathers of the vocational guidance movement, undertook one of his studies at the specific request of the Commissioner of Education. During the World War I period, a member of the staff of the Bureau who was assigned responsibility for the field of vocational guidance wrote the Bureau's first bulletin on the subject, *Vocational Guidance and the Public Schools*. At the same time, the Bureau was cooperating with the Commission on the Reorganization of Secondary Education which in 1918 issued its important statement on *Vocational Guidance in Secondary Education*.

The Office of Education continued to produce guidance publications during the 1920's and 1930's. It aided the movement for the study of specific occupations by preparing occupational leaflets dealing with the various professions. The National Survey of Secondary Education, which was conducted by the Office and financed by a foundation grant,

* A.B. 1936, A.M. 1929, Columbia University; Ed.D. conferred June 1, 1949.

devoted a significant monograph to guidance programs in high schools.

Studies produced by the Office in the field of guidance became more numerous and more specialized during the 1930's. In addition to comprehensive bibliographies of current guidance literature, there were bulletins dealing with college student personnel work, studies made in the Civilian Conservation Corps, and manuals on testing related to guidance on various levels.

OCCUPATIONAL INFORMATION AND GUIDANCE SERVICE—A CHILD OF THE GREAT DEPRESSION

The depression of the 1930's produced the conditions under which the success of the final effort to establish a national guidance service was assured. The need for a program became urgent and in a sense desperate as unemployment grew and large groups of our population were literally cast adrift. Youth, and young adults especially, felt the full weight of dislocation and insecurity. It was generally recognized more and more clearly that a satisfying life for an individual depends to a great extent upon proper adjustment in a vocation.

Among the agencies set up for this purpose, the Civilian Conservation Corps and the National Youth Administration were nation-wide activities conducted by the Federal Government, while the American Youth Commission was a private organization sponsored by the American Council on Education.

LEADERSHIP OF THE NATIONAL VOCATIONAL GUIDANCE ASSOCIATION

At the same time the leading professional organization of guidance workers, the National Vocational Guidance Association, was making many contributions. One of the most important was the development of a program financed by the Carnegie Foundation called the National Occupational Conference. This Conference sponsored a number of much needed studies and promoted guidance through the enlarged professional journal of the Association, renamed *Occupations*. One of its most important and lasting contributions was the founding of the *Occupational Index*, a specialized index to guidance publications.

The National Vocational Guidance Association campaigned continuously and persistently for a national guidance program. The question was discussed at national and local meetings and through the pages of its magazine. The Association's 1937 convention was the scene of a discussion of a very definite proposal for the establishment of a guidance service in the Office of Education. Its leaders were prominent among the guidance workers who were consulted in connection with the organization of the Occupational Information and Guidance Service and the development of its policies.

Strong influence was also exerted by the Adjustment Service in New

York City. Although local in scope and relatively brief in its period of operation, it gave an impressive demonstration of the value of a guidance center to a community and to individuals. Equally important, many of its staff became outstanding national guidance leaders.

Reference must also be made to the President's Advisory Committee on Education which in its report in 1938 made recommendations regarding the development of a program of vocational guidance and pointed out that vocational guidance was not receiving proper attention as part of vocational education, especially in the program subsidized by federal funds.

LEADERSHIP IN THE OFFICE OF EDUCATION

The staff of the Office of Education was in close touch with discussions relating to the guidance program, and under the leadership of Commissioner Studebaker developed plans which finally matured in the organization of the Occupational Information and Guidance Service. One of the critical decisions involved was the use of vocational education funds to finance the project, and this determined the placement of the guidance agency in the Division of Vocational Education. The Commissioner received a grant from the National Occupational Conference to assist in the initial development of the work. Although the Guidance Service was organized under the Vocational Education Division, the question of the maintenance of separate guidance functions in other divisions of the Office of Education has arisen.

PROMOTION OF GUIDANCE THROUGH STATE DEPARTMENTS OF EDUCATION

The Occupational Information and Guidance Service has as a primary responsibility the promotion of guidance through the states. Aid is given to the states in developing guidance policies and in making them a part of the State Vocational Education Plans which determine the basis for the payment of federal subsidies under the Vocational Education laws. Guidance programs were broadened under the George-Barden Act of 1946 which extended reimbursement to include counselor training activities, salaries of counselors in local schools, and out-of-school youth guidance programs.

Vocational education subsidies may now be paid to the states for the following guidance services on a matching basis, one dollar of federal funds for each dollar of state or local funds: salaries and traveling expenses of state, county, or local guidance supervisors; counselors in local schools; persons engaged in counselor training programs; and salaries and expenses of persons engaged in counseling out-of-school youth.

Maryland was the first state to enter the program which now includes

(1948) forty-three states and territories. Several states conduct programs supported wholly by state funds.

The Service has held many conferences, both national and regional, with state supervisors of guidance in order to promote the programs. Since there has been considerable turnover among the supervisors, the conferences have been one of the chief means of assuring continuity of effort in state guidance services. Important conferences have also been held on the subject of counselor training which has shown a substantial growth over the past decade.

COOPERATIVE RELATIONSHIPS

Much of the effort of the Guidance Service is devoted to working with governmental and non-governmental agencies and professional groups in the promotion of the guidance program. During World War II there were numerous activities of this character. A series of bulletins on workers in defense industries was produced in cooperation with the United States Employment Service and the War Manpower Commission. Close liaison was maintained with all branches of the armed forces and the Selective Service System. Many projects relating to the war effort were published with funds provided by other agencies.

During the summer of 1948 the Chief of the Service acted as adviser to the United States delegates at the International Labor Conference at San Francisco. Other staff members have rendered and are currently rendering important service on various professional committees. Among the organizations represented are: the National Vocational Guidance Association, the Division of Counseling and Guidance Psychologists of the American Psychological Association, and the National Association of Guidance Supervisors.

RESEARCH PROJECTS AND PUBLICATIONS

The Occupational Information and Guidance Service devotes a great deal of effort to the production of written materials of various kinds, from one-page mimeographed leaflets to full-fledged printed bulletins. The production of such written material is fundamental in an agency like the Office of Education which is devoted to research and the dissemination of information.

Much has been accomplished in spite of restricted printing budgets. During World War II many of the publications were the result of cooperative effort and were financed with war funds available through other agencies. Other bulletins have been issued with the cooperation of private publishers under special agreements. A manual entitled *Guidance Testing* was published in 1948 under this plan.

Limitation of funds for printing raises the question of the issuance of free publications to guidance supervisors and counselors. It cannot be

denied that effectiveness of the program of the Service depends in large measure upon the extent to which it can place needed material in the hands of field workers. More frequent use of the professional journals and the assistance of an advisory committee representing the professional guidance organizations is suggested as one means of maintaining adequate contacts with guidance people throughout the country.

THE FIRST DECADE

The first ten years of the Occupational Information and Guidance Service paralleled a momentous period in the history of our country. Established as the depression era was waning, the Service experienced the "National Defense" stage, the World War II period, and the first of the post-war years. This was a time when vocational guidance and guidance generally were receiving a great deal of attention outside the immediate field of education as well as within it. Guidance was given a great impetus during the depression years but this was meager indeed compared with the gigantic spurt that came with the war. Guidance techniques were adopted wholesale by the Selective Service and the armed forces and thousands of guidance and personnel workers were employed to put them into effect. Other thousands were trained to help with the job. Testing, interviewing, counseling became the watchwords as men and women were called to the colors, selected for various types of training, assigned to duties, or classified for separation from the service. As hostilities came to an end, the Veterans Administration embarked upon a guidance program of tremendous scope in an effort to help service personnel readjust themselves successfully to civilian life.

Thus, more than half the decade was occupied with activities which were directly and indirectly related to the war effort. It is noteworthy that at the same time the growth and promotion of the program throughout the states went forward.

THE OUTLOOK

It is against this background that we must consider the outlook for the Occupational Information and Guidance Service. We have now entered the period when guidance is accepted as an unquestioned part of an adequate educational program. There are, however, varying points of view regarding the organization of guidance and its scope and functions.

"VOCATIONAL" GUIDANCE vs. A WIDER PROGRAM—A BASIC ISSUE

It might be possible for the Service to limit its activities to the special area of "vocational" guidance. No doubt the narrower field could be covered with greater effectiveness. There is also no question that more concentration on vocational guidance would be very helpful, since it may be that vocational guidance has been weakened by emphasis on other

phases of guidance. Schools would doubtless give more attention to vocational guidance if it were more actively promoted. Many counselors in schools have not had adequate training in vocational guidance and because of their teaching background are devoting their energies chiefly to educational guidance.

When the matter is considered further, however, it appears that there are some serious objections to the above proposal. The trend today in education is to integrate related activities, rather than to break them up into their component parts. This same trend should apply to the field of guidance which would certainly be weakened if the program were broken into small segments. Division of guidance responsibilities would increase the difficulties of coordination and would unquestionably result in duplication, conflicting policies and practices, and wasted effort.

There must be unity in guidance if it is to be effective. If education today views the child as a single integrated personality, guidance must also function in the same way. Responsibility for coordination and control of the guidance of an individual must rest with one counselor, rather than with several competing services. This is true even though the counselor may seek assistance outside his own resources for his client. Moreover, the guidance program must be coordinated through all school levels and all types of agencies.

RECOMMENDATIONS

The following suggestions are offered for the improvement of the Service:

1. Clarification of policies regarding allocation of guidance functions and responsibilities in the Office of Education is a first step in improving the program of the Occupational Information and Guidance Service. Three divisions now maintain guidance functions: Higher Education, Secondary Education, and Vocational Education. Duplication seems most likely to occur between the divisions of Vocational Education and Secondary Education. The latter has on its staff a specialist for counseling, pupil personnel, and work programs. Both the Occupational Information and Guidance Service and the Secondary Division are concerned chiefly with secondary schools. In the area of Higher Education there seems less possibility of conflict even though a specialist for college personnel programs may be employed. Satisfactory relationships have already been established in such matters as the holding of joint conferences on counselor training and the issuance of the reports on summer guidance offerings in colleges and universities.

2. Special emphasis should be placed upon the promotion of guidance work among out-of-school youth. This area has been recognized in the federal vocational education laws and administrative policies. Many states now include in their state plans for vocational education provision

for the counseling of out-of-school youth. Authorization extends counseling for this group through evening school programs of all types and in such other agencies as may be sponsored through the public schools.

3. Guidance for out-of-school youth should also be promoted through cooperative relationships with other agencies, both public and private. Public agencies include the U. S. Employment Service, state employment offices, and employment services which may be maintained by local government units. Private agencies include those maintained by both religious and secular groups, such as B'nai B'rith, the Y.M.C.A., Y.W.C.A., Catholic organizations, Boys' Clubs, and business and professional organizations. While the Guidance Service has enjoyed relationships with these groups, there is need for a more aggressive program of promotion and coordination.

4. In the development of the over-all guidance program there is need for closer liaison with professional societies and other public and private agencies. These organizations would include basically the groups forming the Council of Guidance and Personnel Associations, and other private associations and foundations, such as the National Education Association and the American Council on Education. Examples of governmental agencies are: Department of Labor, Bureau of Labor Statistics and Women's Bureau; Department of Commerce, Bureau of the Census; Federal Security Agency, U. S. Employment Service; Veterans Administration; and the National Military Establishment.

5. The Occupational Information and Guidance Service should embark on a systematic long range program of research and publications. It is suggested that planning take into consideration estimated needs over a ten-year period. Intermediate goals should be set and allowance made for necessary flexibility. A cycle plan of emphasis could be developed to keep materials up to date and maintain continuous and sustained effort in all areas.

6. Plans should include some fundamental research rather than the mere reporting of data. The study made in 1947 by Clifford P. Froehlich of the Service staff, "Factors Related to the Effectiveness of Counseling", is cited as an example of the type of much needed basic investigation which the Service should sponsor. This would require, of course, greater resources than the Service now possesses. However, since the ultimate progress of guidance and counseling programs depends upon basic research, the Federal Government may very properly supply the means.

7. There should be over-all coordination of the program of research including other public agencies, the states, private organizations, and the professional societies.

8. A more adequate program of field services and coordination of state programs is needed. This would entail, of course, more funds for

travel as well as for additional staff members. The financial problem can be seen readily if one considers the possibility of attempting to provide merely one day of field service per year for each of the forty-eight states.

9. New staff members should have training and experience equivalent to the qualifications required for associate membership in the Division of Counseling and Guidance of the American Psychological Association.

10. Conferences with state supervisors should be held at least annually as was the custom during the war. These could be supplemented by regional conferences and group meetings. One problem in connection with the holding of annual conferences is that attendance of some supervisors is restricted because a number of states impose limitations on out-of-state travel for employees. Biennial meetings are too infrequent to maintain the close relationship which should exist between the Guidance Service and state supervisors.

11. Expansion of counselor training should be continued. This should include further studies on optimum training for counseling, in-service training and up-grading of counselors in service, and training of additional personnel to provide new counselors for an expanded program as well as replacements.

12. Consideration should be given to a program for a minimum of guidance training for all teachers, especially on the upper elementary and secondary levels. This is based on the concept that guidance in schools to be effective must be the responsibility of every member of the staff. Even though counselors may be available to render specialized assistance, teachers must have an adequate guidance background so that they may be able to help their pupils by recognizing the need for guidance when problems arise.

CONCLUSION

Though many problems were yet to be solved, the first ten years of the Occupational Information and Guidance Service marked a period of outstanding progress in guidance on all school levels. Establishment of the state programs of guidance supervision alone may be considered an unusual achievement. There seems to be every assurance that the Service may face the next decade with confidence that its leadership will produce even greater contributions to the welfare of the young people in our schools.

THE TEACHING OF METHODS IN THE PRESERVICE EDUCATION OF ELEMENTARY TEACHERS

by FRANCES HOLLIDAY •

The purpose of this study is to make a survey of current practices in the teaching of methods in the preservice education of elementary teachers and, through an analysis of the findings, to evaluate the different types of procedures in use in the various institutions.

Two hundred and seventy-two courses from 112 institutions—members of the American Association of Colleges for Teacher Education—were studied. The survey was limited to the areas of arithmetic, language arts, science, and social studies, with 77 courses in the teaching of arithmetic, 46 in language arts (exclusive of reading), 77 in reading, 33 in science, and 39 in social studies.

Probably these courses are somewhat above average in quality. They were chosen, in the first place, from those institutions whose standards meet those of the American Association of Colleges for Teacher Education. They represent those institutions, also, whose courses were so effective that they were willing to submit them for evaluation.

Four types of courses were found:

1. The special methods course in which the purpose is to inform the students concerning various methods.
2. Professionalized subject-matter courses in which the necessary instruction in effective methods of teaching is integrated with the presentation of subject matter.
3. Laboratory courses which bring together in a laboratory situation the integrated curriculum of the modern elementary school, the materials needed in its use, and the procedures that can be used in the developmental experiences of children.
4. Integrated courses in which the study of teaching procedures is a part of the program of student participation or student teaching.

The courses were analyzed to determine their type, content, and the procedures used by the instructors. They were then evaluated in the light of six criteria made by the writer and validated with the help of a group of experts in the field. The criteria are:

1. A good methods course is based upon an acceptable philosophy of education.
2. A good methods course makes available to relatively inexperienced teachers many of the most fruitful experiences of successful teachers.
3. A good methods course is built upon the assumption that there are many ways of attaining desired goals.

• B.S. 1920, Northwest Missouri State Teachers College; A.M. 1928, University of Missouri; Ed.D. conferred November 11, 1949.

4. A good methods course will help to develop the skills needed in directing the learning activities of children.

5. The teaching in the methods course should demonstrate a variety of effective procedures.

6. The methods course should be clearly related to those sciences which are basic to education.

This evaluation was supplemented by a study of student reactions to these courses, obtained through a questionnaire based upon the ideas underlying the criteria. This questionnaire was filled out by 304 students representing 62 schools from 27 states and the District of Columbia.

The two types of evaluation resulted in much the same conclusions, with the integrated and laboratory courses ranking consistently higher than the others.

The methods courses seem to be having, along many lines, a high degree of success in the preparation of teachers who can go into the elementary schools with some assurance that they can guide the children's activities.

Many of the courses recognize the importance of giving the student a knowledge of many procedures being used by good teachers.

Reports of courses in all four categories include repeatedly the discussion of various methods that are being used by teachers in the field. In fact, both reading and discussion are universally found. Sixty-eight courses report the making of lesson plans showing how various procedures can be used at different grade levels. Fifty report the making of large unit plans. Observations of elementary classroom teaching as a means of accomplishing this purpose were reported by 108.

Growing out of this presentation of many procedures, there is evident in the data a recognition of the fact that there are many ways of attaining the goals of the elementary classroom. Reports of the study of the variety of elementary school philosophies that are prevalent in the country and the different procedures that grow out of these, indicate that the day of following one pattern for all teaching is waning. This is one of the most hopeful phases of the methods teaching described in the courses.

Another real strength of the methods courses which were examined lies in the wide-spread feeling of responsibility on the part of methods instructors to illustrate in their own college classes a wide variety of effective teaching procedures.

It is likely that most of the students in their beginning teaching will teach as they were taught. A few of the courses showed only the conventional types of college teaching, but in 178 of the courses, a variety of methods was being used, some of these illustrating highly creative methods of approaching elementary school activities. The criticism that methods teachers are so poor as instructors that they exert a bad influence on the young teacher is evidently becoming out-dated, due to this

new awareness of the responsibility for being an example in good methodology.

The courses, also, seem to be giving to the students a rich opportunity to become acquainted with the leaders in the four subject-matter areas being studied.

The bibliographies sent with many of the outlines show a wide variety of viewpoints, a comparatively complete coverage of units within each area, and contributions of most of the important writers in the subject-matter field with which the course is concerned. The students who follow the offerings of the bibliographies in some detail and with any degree of selectiveness have the opportunity to benefit from the best thinking going on today.

Another strength in the courses lies in the variety of assignments given in the syllabi.

The assignments listed are on the whole carefully worked out to include a wide variety of activities to be engaged in by the methods students. They deal with such activities as reading, writing, planning for various purposes, observation of teaching, and participation in elementary classrooms. If they are carried out as carefully as they are planned, many students are having the opportunity to gain a habit of making thoughtful approach to the solution of elementary classroom problems.

Many of the courses reveal a consistent effort to give to prospective teachers a knowledge of the subject matter of the elementary school.

Students coming into the colleges preparing to become elementary teachers are often lamentably weak in their knowledge of subject matter. This is particularly true in arithmetic and science though it is true to some degree in all subjects. All types of courses show a desire on the part of the instructors to correct this weakness when it is apparent in the students. This rather new awareness of the need for the *what* as well as the *how* in preparation for elementary teaching should result in a better knowledge of subject matter on the part of the children in the elementary schools.

One of the greatest strengths in many of the courses is found in the opportunities given for many and varied contacts with children.

The carefully planned observations reported, from which students return to the college classroom to draw out the principles of teaching observed; the encouragement given the students to work with children in many out-of-school activities; the opportunity to participate in elementary classrooms as procedures are carried out which are being studied in the college class—these furnish activities that are invaluable to students.

This particular point is, however, one of the greatest weaknesses in other courses.

Many courses fail to mention contacts with children. Some, admittedly, find it not feasible to set up a program including such contacts. The students in their reactions to such courses mention more often than any other criticism the feeling of the need for watching and working with children. They express the idea that no other activity would have developed so well the feeling of security with which they could have gone into their student teaching.

In addition to the lack, found in some of the courses, of the opportunity for wide and varied contacts with children, a few other weaknesses are apparent.

There is almost complete lack of agreement concerning the purposes of the methods course.

This is a defect that demands attention if the methods courses are to show real improvement. Perhaps this is one phase of the methods problem in which the cooperation of teacher education leaders is needed. Teachers who go into the elementary classrooms cannot be equally well trained until some agreement is reached concerning this problem. If the methods course is to be the source of only knowledge of methods, then some agency must be set in motion that will develop skills. If the methods course is to develop skills then facilities for doing so must be provided in all teacher-education institutions. Until an agreement is reached, teacher-education institutions cannot assume the leadership they should have in the improvement of the philosophy and practices of the elementary schools.

Another difficulty lies in the fact that too many of the methods courses are taught without the support of a clearly stated philosophy.

Even those courses in which it is stated do not seem to have been particularly successful in giving the students a functional personal philosophy. One of the fundamental beliefs in the elementary school of today is that learning is purposeful. It is almost universally acknowledged that real purposes emerge from a deep-seated philosophy. In the face of this, however, many courses which educate teachers to go into these schools give no outward indication of a basic philosophy. The procedures the course presents will give patterns for the teacher to follow, but the philosophy it radiates will send out creative teachers of children.

Many courses make no attempt to develop even a "safety minimum" of skill which the young teacher can take into the classroom in her beginning teaching.

Every young teacher needs two types of skills: skill in doing some of the activities involved—manuscript writing, arithmetic computation,

reading for various purposes, for example; and skill in teaching activities as various procedures are used in the classroom. This must be taken care of either in the methods course or as the students study methods through actual participation. The students complain over and over, in their comments upon courses, that they do not know what to *do* when they go into the classroom; that they have heard about so many things but have actually done so few of them. Before much improvement can be made in elementary teaching, students, in their training, must gain some skill in doing.

Another need which seems apparent in many of the courses is for greater emphasis upon the use of community resources.

The need for a keener awareness of the possibilities of the community as a source of educational experiences is clearly indicated. A knowledge of how to select those resources of greatest importance in the educational program and how to use them once they are selected must be emphasized some place in the teacher-education program. The methods course seems the logical place for this problem to be solved.

Perhaps the most hopeful sign found in the courses studied is that institutions, instructors, and students are studying the problem critically in an effort to correct the weaknesses of the methods courses and send into the schools teachers who are better prepared for this complex task. Through cooperation of these three groups and through critical self-analysis on the part of each person concerned, the problem of methods can be, at least partially, solved.

RECOMMENDATIONS

Certain recommendations grow out of the evaluation.

The methods course should:

1. Emphasize a philosophy of education which is in keeping with that which guides practices in the better elementary schools of today—one which:

a) Incorporates the findings of the child study movement in its emphasis upon child growth and development,

b) Emphasizes the need on the part of the teacher for social awareness and social competence,

c) Is reflected so clearly that the students cannot overlook its implications for the improvement of teaching.

2. Give a "safety minimum" of skill by providing much opportunity for participation in using various teaching activities. This may be accomplished partially through the use of socio-drama, but much actual participation in elementary classrooms is essential.

3. Utilize constant contacts with children in the building of understanding and skill in relation to the teaching of those activities with which the course is primarily concerned.

4. Give practice in the use of community resources as they affect the elementary school classroom.
5. Give the needed knowledge of subject matter unless that is provided in some other part of the teacher education program.
6. Instill in the students an awareness of the implications of research for the improvement of teaching and give them procedures by which the findings can be used.

Needed improvements in the work of the methods teacher are that he should:

1. Remain so close to the elementary school that he will be able to help his students to find solutions for problems which actually exist in the elementary school classroom.
2. Be a master teacher whose college teaching will constantly demonstrate the procedures teachers should use.
3. Have an "intellectual curiosity" that will prove to be a constant source of inspiration to the students.

The teacher-education institution should:

1. Have a philosophy in keeping with that of the elementary school.
2. Provide opportunities for constant contacts with children through the whole teacher-education program.
3. Provide the opportunity for a sound education in academic subjects.
4. Provide all facilities needed for the carrying on of the procedures used in the modern elementary school.
5. Through its own interest in research, prove to be a source of constant inspiration to the students.

Additional research is needed along many lines in relation to methodology. The need for the following appeared repeatedly during the progress of this study:

1. A careful study of each of the types of courses used to teach methods and its peculiar contribution in relation to a given school or area of the country might result in much improvement in elementary education in various sections. Each school and each locality has its own problems that such a study might serve to solve.
2. Intensive research is needed in each of the subject-matter areas studied here. This, too, might make a most worthwhile study for a single college or the colleges of a given section to undertake in relation to their own problems.
3. A complete history of methodology would be of service in the study of teacher education. Though much can be found in the field of the history of teacher education in general, there seems to be no source which places real emphasis upon this particular phase. Since decisions of today are made in the light of the decisions of yesterday, a history of methodology might very conceivably lead to improvements in the solutions of the problem as teacher education is facing it today.

MANAGEMENT OF THE HIGH SCHOOL PRINCIPAL'S OFFICE

by WILLIAM SAMUEL RUMBOUGH*

The purpose of this study is to make helpful suggestions for the improvement of management practice in high schools. Management is here taken to mean the coordinating and dovetailing which are needed to bring all available resources to bear on the problem at hand. Management is a more restrictive term than administration since administration includes organization as well as management. This study is restricted to management practices only.

There have been selected for analysis certain problems of management which have seemed to escape detailed discussion in the literature of secondary school administration. These problems are mostly small ones when considered individually; but collectively, they loom large in the demands which they may make on the principal's time and effort. They are also important in the effect which they may have on the smooth operation of the school. Three types of problems are examined. First are those which involve the principal directly; the efficient use of his time, routines to help him begin at proper time the tasks which he should undertake, and checks to prevent his delaying or neglecting matters which his long-range plan includes. Another type of problem relates to the school office. The office performs a great variety of functions; this study examines a few of these functions which demand considerable time and attention of the office personnel. The third type of problem is that of informing and coordinating the staff, faculty, and student body with respect to routine procedures and scheduled special events. The study recommends procedures and devices for handling these matters.

SOURCES OF DATA

The twenty-three books, twenty-eight magazine articles, and two theses which are listed in the bibliography were the most helpful sources of written material which the writer located; these are only a small portion of the literature which was examined, scanned, or read. There seems to have been a wave of interest in the subject beginning about 1925. A chronological analysis of the 53 bibliographical citations appended to the study shows them distributed as follows:

1924 or earlier	8
1925 to 1934	25
1935 to 1944	16
1944 to 1948	4

* B.S. in E.E. 1927. A.M. in Ed. 1946. The George Washington University; Ed.D. conferred November 11, 1949.

The writer's interpretation of this upward surge which began at about 1925, is that by that time, the rapid growth of secondary school population, the expanded curricular offerings, the added responsibilities which had been taken on by the school and the multiplicity of extra-curricular activities, had necessitated a reorientation with respect to problems of administration. The older, casual methods were proving inadequate. Greater efficiency and more businesslike procedures had become a necessity. Many writers were moved to contribute their experience to the solution of common problems which had become pressing on all sides.

Data concerning managerial practice were drawn from lectures on managerial policies, practices, and devices in the School of Education of The George Washington University and from the general discussions which followed these lectures. Further data were gathered through discussions with friends who are familiar with current managerial practices in schools in and around Washington, D. C.

The writer also used his twenty-nine years' experience as a staff officer and commander in the U. S. Army in situations which involved administrative and managerial responsibilities somewhat comparable to those of a high school principal.

In order to learn of current practices, a questionnaire was sent to a sampling of well administered schools throughout the country. The chief state school officer of each state was asked to name 4 of the schools of his state in which administration is particularly effective. Replies were received from 47 states but one was received too late to be used and another stated that the officer "had no school to recommend". One hundred seventy-nine schools were named by the remaining 45 states. A letter was written to the principal of each of these schools outlining the purpose of the study and asking if he would give 15 minutes to answer a questionnaire. A return-addressed post card was enclosed in order to simplify the principal's reply and 167, or 93 per cent, of the principals returned the card agreeing to answer the questionnaire. One hundred sixty-three, or 97.6 per cent of those who said they would answer it actually did, a telegraphic night-letter follow-up bringing in the last four replies. The "yes" or "no" replies to the questions and the helpful suggestions and remarks made by these successful principals is believed to present a good outline of the best present-day management devices and procedures. It should be remembered, of course, that each of these schools had established a reputation for efficiency and it may be assumed that the practices revealed are well above those of the average of schools throughout the country. This high level of effectiveness of reporting schools is in keeping with the purpose of the study which is not to discover wherein current management is weak but is rather to note and to capitalize on managerial practices which are strong.

OVERVIEW OF THE FINDINGS

In a study conducted in 1928, Reavis and Woellner* found that the group of principals who replied to their questionnaire were spending from 20 to 25 hours per week in the office. Answers to the present writer's questionnaire show that the 163 principals who replied are spending an average of 35.4 hours per week in the office, the median being 40.3 hours. It appears that office work demands have so increased during the last 20 years as to all but confine many principals to the school office. Remarks of several principals on the questionnaires indicate a feeling of being overburdened, weighted down by administrative burdens.

The main portion of the present study is devoted to the development of procedures which are intended to systematize, decentralize, and speed up the principal's office work, thus permitting him to give more of his time and energy to supervisory and curricular responsibilities and to other important duties outside the office. The study develops twenty-three procedures. The need for each is indicated by reference to current practice in well-managed schools as revealed by the questionnaire and is often supported by quotation from the literature on the subject. Effort has been made to describe each procedure as briefly as possible and yet with sufficient detail to permit the reader who may desire to do so, to follow the proposed procedure as written or to adapt it to his own situation. These procedures cover:

1. Organizing the principal's time: office hours, tickler, work-organizer, the principal's desk, check as to use of time, management controls in the care and upkeep of the school and its equipment, economy of time in personal contacts.
2. Organizing certain important operations of the school office: information bureau, telephone calls, correspondence, reports, management control of supplies and equipment, detailed financial estimates of projects, use of office machines and other devices.
3. Keeping staff and faculty informed and coordinated: responsibilities definitely assigned, organizational chart, administration handbook, scrapbook of blank forms, packet for substitute teacher, school calendar, bulletin board, mail and message box, check slip.

Office Hours.—As for regular office hours, it is proposed:

- a) That they be chosen with due regard to the convenience of those who need to confer with the principal;
- b) That they be limited to two hours per day during school hours, to one hour immediately after the dismissal bell on two afternoons per week and to one period of two hours on a designated evening;
- c) That the principal post these hours on his office door, publish

* William C. Reavis and Robert Woellner "Office Hours of Secondary School Principals," *School Review* XXXVI (Nov. 1928) 664.

them for students, parents, and public, and make earnest effort to secure the teamwork of his office force, staff, faculty, and parents to restrict callers and calls to these designated hours except in case of emergency or near-emergency;

- d) That the principal make it known informally that he is usually available in his office during the lunch period for casual contacts and minute-conferences;
- e) That the principal endeavor to do all his routine office work during the approximately nineteen hours suggested above, thus freeing himself for his other important duties outside the office and for work in the office which requires sustained mental effort uninterrupted by callers, telephone calls, or other diversions.

Organizing His Work.—Procedures are suggested for the organization and use by the principal of a tickler system, a work organizer, and for the arrangement of his desk and surroundings to the ends (1) that he may be reminded of each task at such time prior to performance as will permit unhurried and orderly preparation, (2) that he may plan his work on a long term, on a weekly, and on a daily basis and thus free himself from the annoyances of unprepared-for, pressing demands on his attention and, (3) that, while at work, he have needed materials immediately at hand and in orderly array.

Check as to Use of Time.—Man is a creature of habit. Many things which he does seem necessary or proper merely because he has been doing them in the past. Some things are done in a certain way because he has grown accustomed to doing them in that way. An occasional check as to the use which the principal is making of his time may reveal things which he might wish to change. Such a periodic check is suggested.

Inspections.—Checking on janitorial service is only one purpose of inspection. Another purpose is to note the standards of neatness and order of the various teachers and the discipline in the several classrooms with respect to the care of desks and equipment. A third purpose is to note the need for repairs. It is economy to effect repairs promptly, for the appearance of needed repairs invites rough usage and vandalism. Pupils tend to respect well-kept buildings and equipment. The principal may decentralize the immediate care of the various rooms and portions of the buildings and grounds but he still remains responsible for the entire plant. It is suggested that only by frequent inspections can he know conditions and thus be in position to fulfill his obligations to the school system which employs him.

Organizing Certain Important Operations of the School Office.—Many of the principals who replied to the questionnaire gave credit to the school secretary for the school's reputation for administrative efficiency. Good office organization and operation can relieve the prin-

principal of much of the burden which, in some cases, is proving almost overpowering. Several procedures are proposed for organization and operation designed to relieve the principal of many details which can be handled as well or better by others. One is an information bureau, which may consist of just one person. But this person should be selected, trained, and supplied with the information and inexpensive devices which will permit her to handle many telephone calls or callers with such complete satisfaction that they will not need to see or to be connected with the principal. Another is the organization of a correspondence tickler system which permits the decentralization of the preparation of many letters and reports while assuring that each is handled in proper time and that the principal sees each important paper before it leaves the school. Other procedures described are those for management control of supplies and equipment and for the preparation of detailed financial estimates for repairs, improvements, and additions. These procedures would decentralize the work on these important matters, would systematize their operation, and would keep the principal in control of major projects.

Keeping Staff and Faculty Informed and Coordinated.—If a person who is engaged on a project is not fully informed as to his responsibilities, he is forced either to ask many questions or to guess at what is expected of him. It is also likely that he will overlook some important operations while overdoing others of less importance. He is also almost sure to feel uncertain and, as a consequence, he will work at less than full efficiency. It is essential to good administration, therefore, that each member of the staff, faculty, and student body be informed as to his responsibility, that he be given a good idea as to the functions of those with whom he works and that he be kept aware of the progress which is being made on each of the projects in which he is engaged. Some techniques and procedures to accomplish these purposes are presented.

Organizational Chart.—Forty-nine of the schools which replied to the questionnaire use an organizational chart to assist in coordinating the work of the school office; an additional thirty-seven believe such a chart would be helpful. Except for a very small school an organizational chart is proposed, this chart to show lines of responsibility and principal duties of each member of the office.

Other Devices for General Coordination.—Another device for general coordination is the administrative handbook. It is felt that the handbook is a rather comprehensive study in itself; consequently the present study merely outlines the general purposes and make-up of the handbook. Since most schools use numerous blank forms it is believed that a new teacher, perhaps the older ones too, would find a scrapbook of blank forms helpful, each form to be filled out as for a typical case and to be accompanied by a page in the book giving full and specific

directions for its preparation and disposition. It is also proposed that each new member of the staff and faculty, when employed, be invited to confer with the principal, that the new member's duties be discussed and that the new member be given a written outline of her duties.

Replies to the questionnaire show that practically all schools use the bulletin board and have a routine procedure by which it is taken care of each day, a pigeonhole mail and message box for distribution of mail and materials to staff and faculty, and a check slip on which members of the school place their initials to indicate completion of some specified task. Each of these devices is discussed briefly and procedures are suggested by which each may be used to good advantage.

Packet for Substitute Teacher.—In a secondary school the substitute teacher may be responsible for the instruction of one hundred fifty students in her five teaching periods. It is thus a matter of considerable importance to the work of the school that she be able to fit into the situation smoothly and to guide learning with the least divergence from the plan of the regular teacher. The writer believes that school administration should give high priority to procedures which are designed to make the substitute teacher more effective. A procedure is proposed to accomplish this purpose. Each regular teacher would prepare and would keep up to date a schedule designed to help orient her substitute if the latter should be needed. This schedule would show for each period: the room, the subject being studied, the names of a secretary and vice-secretary who will call the class roll and handle the attendance record, if desired, and the names of four students who have been designated and who are able and willing to assist the substitute teacher in conducting the class, these students having been carefully selected by the regular teacher for proficiency, character, and leadership. The regular teacher would keep her lesson plan book and class roll book in a designated place in the teacher's desk. Early in the morning, as soon as the need for a substitute is known, a member of the staff would collect a copy of each book which the substitute teacher will require and would determine and place a paper marker in each book outlining the lesson assignment for the day and a suitable assignment for the next day. If there are regular teachers with free periods and if it can be arranged, the staff member would also designate regular teachers to introduce the substitute to each class and to offer such assistance as may be necessary or desirable. It is thought that such a procedure would be more than worth the administrative effort which it would require. It would certainly be appreciated by the substitute.

School Calendar.—The well administered schools which replied to the questionnaire regard the school calendar as an important administrative device. A procedure is described for the preparation of such a calendar. This procedure calls for the designation by the principal of a calendar

committee of faculty and students. The record device is a box which contains thirteen eight inch by ten and one-half inch cards, twelve of them ruled for the twelve months of the year and the thirteenth as a general file. Each card is kept in a manila envelope labeled for the particular month and holding also the original records of requests for items to be entered on the calendar for that month. The procedure calls for the committee at the beginning of the year to gather data for the entire year insofar as dates have been designated. This data will include the official calendar drawn up by the school board or superintendent's office; it will include opening and closing dates, holidays, end of report periods, teachers' workshops and meetings, and other official dates or events. Athletic schedules, parties, dances, and other extracurricular events of general interest will be assembled. The committee will have before it a record of the activities of previous years and it will initiate action well ahead of events, suggesting that this or that committee complete its plans and request its dates. In this way the calendar record can be assembled well in advance and the affairs of the school can be scheduled in orderly fashion.

The procedure calls for the habitual display on the school's main bulletin board of calendars for two months, the current month and the following. These are large calendars, 24" x 36" being suggested, thus giving a space of about four inches square for each day of the month. These calendars are ruled off by a member of the mechanical drawing class and the various types of events are entered in mechanical drawing lettering in distinctive colored inks, for example, black for curricular events, green for minor extracurricular events, red for major extracurricular events, etc. On the first day of a new month, for example April, the calendar for March would be taken down, that for April, which has already been displayed since March 1st. is moved over to the left-hand space vacated by the withdrawn March calendar and the new calendar for May is put up at the right. There are thus always before the school, calendars showing officially approved dates for at least a whole month ahead.

GENERAL CONCLUSIONS

The above sketched findings may be considered special conclusions or procedures. In addition, there are certain general conclusions which the study has developed. These are:

1. In general, high school principals find it necessary to spend long hours in the office;
2. A high school principal might well give attention to more efficient management of his time; to this end he might look upon the high school office as merely an extension of himself, seeking to transfer to the office

such responsibilities hitherto carried by himself as the office may be capable of performing as well or better;

3. The administrators of well managed schools use numerous devices and procedures each designed to increase the efficiency of some phase of managerial work; principals are alert to recognize the value of a suggested new device or procedure which may effect further improvement in management;

4. Time spent in preparing material which informs and coordinates staff and faculty helps make the school operate smoothly, reduces the need for managerial action to correct misunderstandings, and thus saves the principal's time.

THE DEVELOPMENT OF MORE EFFECTIVE METHODS OF TRAINING ELECTRONIC TECHNICIANS IN THE NAVY

by HOWARD ODIN JOHNSON *

THE PROBLEM

This dissertation is concerned with the experimental development of more effective methods of training electronic technicians in the Navy.

DEFINITION OF TERMS

Electronic technicians are enlisted personnel of the Navy, charged with the responsibility of maintaining radio, sonar, and radar equipment. Most of the technicians on entering the training with which this dissertation is concerned were high school graduates, 18 to 20 years of age, and without previous experience or training in electronics. The expression "maintaining equipment", refers to duties ranging from simple adjustment to complex alteration and repair of electronic equipment. "Electronics" as used herein, refers to a phase of electrical application involving vacuum tubes. This definition applies to civilian as well as military aspects of the science. The word "methods" is used in its broadest sense to include classroom techniques, subject matter content, class size, instructor assignment, scheduling, and other aspects that may influence the teaching-learning situation. More effective methods as used here are those that permit the training of students in a shorter period of time without sacrificing present standards, or those that result in a reduction in eliminations due to scholastic causes, or those that provide more effective training in an equal or shorter period of time than was previously required.

DEVELOPMENT OF METHODS

It was believed that many simple, well-understood principles of psychology and learning were not being closely followed in Naval Service Schools. It was thought that if instruction could be devised that would follow the principles more closely, greater efficiency would result. These principles are briefly described in a book by Fox, Bish, and Ruffner for a training program for administrative officers in Naval Service Schools.[†] They were selected with the problems of Naval Service Schools in mind and list 7 characteristics of learning, and for each characteristic, 3 principles of teaching.

The salient features of the experimental method included integration

* F. I. B. 1944, State Teachers College, Eau Claire, Wis.; A.M. in Ed. 1948, The George Washington University. Ed.D. conferred February 22, 1950.
[†] J. H. Fox, C. E. Bish, and R. W. Ruffner, *School Administration*, New York, Prentice-Hall, 1948.

of lectures with laboratory work and the teaching of mathematics when the need arises. The mathematics taught was limited to that which was made necessary by theory and practice. It was taught when needed, and in the amounts needed.

Class size was limited to 14 or 16, and the class was taught by a single instructor for the entire course, when possible. There was a greatly increased emphasis on practical work and a lessening of emphasis on theory. To a great extent, the experimental method was an application of the functional concept of education. The experimental method attempted to use procedures indicated by the nature of the process of learning.

The student work benches were designed and arranged to facilitate the teaching outlined above. The benches were arranged in the shape of a "U", with the instructor's bench at the open end of the "U". Students were seated on stools around the outer perimeter of the "U". The instructor worked inside the "U", and thereby was able to move from student to student with a minimum of disturbance. In the latter portions of the course where large test equipment was needed the "U" was enlarged, and students and instructor worked inside it.

ELECTRONICS TRAINING PRIOR TO THE EXPERIMENT

The methods of teaching prior to the experiment may be described as traditional, resembling closely those used in colleges of engineering. The time was divided equally between lectures and laboratory work, with the lectures divided between mathematics and theory. The laboratory was intended to provide practical exercises in applying the theory and mathematics. Lecture classes ranged in size from 40 to 65 students for a single instructor. One instructor usually taught two periods of mathematics daily, another instructor, two periods of theory, and a third, four periods of laboratory. According to plan, both of the lecture instructors were to assist with the laboratory work, but in practice, seldom more than one was present.

The course was organized into two-week instructional units. Comprehensive examinations were given every other Friday. On the basis of these examinations, students were promoted to the following two-week unit, were retained for a second two-week period of instruction in the unit (called a repeat), or were failed and eliminated from the school.

The number of repeat periods for each student for a year preceding the experiment were 1.63, and eliminations, largely from scholastic causes, were 25 per cent of enrolling classes. With each two-week promotion, the students were under new instructors.

Electronics training for enlisted men was divided into three levels, A, B, and C. Level A was primary training given to newly enlisted men

with no sea duty experience. Level B was advanced training usually given to men during the second enlistment who had completed two years of sea duty. Level C was special training, given to the higher-rated enlisted men, who had completed two or more enlistments. This study is concerned only with Level A training.

Level A training was 42 weeks in length, and was divided into two parts, the basic electronics phase of 26 weeks, and the equipment phase of 16 weeks. Basic electronics consisted of studies of direct current, alternating current, and general electronic circuits, primarily radio. The equipment phase of the course consisted of instruction in the maintenance of Navy radio, sonar, and radar equipment. The experimental method was used only with the basic portion of the course, but instruction was evaluated in both phases of the course.

EXPERIMENTAL INSTRUCTION

Five classes of 14 students each were selected for experimental instruction. The first class convened on 25 April 1949, and the others at two-week intervals thereafter. The students selected for the experiment were as representative as existing measuring devices, information available, and judgment permitted. The first experimental class was under experimental instruction for 16 weeks, and the other four, for 18 weeks each. At the end of this period, the students joined a regular class that was entering the equipment phase of the course, the last 16 weeks of the regular 42-week course. In the equipment phase of the course, the regular type of instruction was used.

The instructors used in the experimental and regular classes were electronic technician petty officers, U. S. Navy. The rates of the instructors were predominately chief and first class, with a sprinkling of lower rated men. Few instructors had received instruction beyond high school, other than Navy technical training. Although a few had had one or two years of teaching experience in Navy Schools, the majority had had no previous training or experience in teaching. The experiment was conducted at the U. S. Naval School, Electronics, Treasure Island, San Francisco, California.

EVALUATION OF EXPERIMENTAL INSTRUCTION

The determination of whether improved methods of instruction had been developed required a comparison of the experimental and regular student. It had been planned originally to base the comparison on the "paired" students in the experimental and regular classes, but due to the more rapid progress of the experimental students and the large number of repeats and eliminations of the paired students in the regular course, ability to make direct comparisons of the paired students decreased progressively until accurate comparisons were not possible. Direct com-

parisons of paired students were made as far as possible, but it was necessary to supplement these comparisons with other methods.

The supplemental comparisons were made by administering comprehensive examinations to the experimental classes and regular classes that had completed instruction in comparable subject matter. Examinations were given at the end of the direct-current and alternating-current portions of the course. Two examinations were given at the end of electronic fundamentals, coinciding with the completion of the experimental instruction.

In the equipment phase of the course, the experimental and regular students were compared by means of biweekly examinations, and biweekly evaluations of students' strong points, weak points, ability in practical work, ability in theory, and knowledge of mathematics. Evaluations were made by means of a prepared form. In both the experimental instruction and the equipment phase of the course, the regular classes with which the experimental students were compared were comparable within the limitations of existing measuring devices, information, and judgment. There was one significant difference between the experimental and regular classes, in favor of the regular class. By the time they reached the equipment phase of the course, about 25 per cent of the weakest regular students had been eliminated for scholastic reasons. All the experimental students, strong and weak, began the equipment phase and were compared with a selected group.

SUMMARY OF ACHIEVEMENTS OF EXPERIMENTAL INSTRUCTION

The instruction time was reduced from 42 to 32 weeks for one class and to 34 weeks for the other four classes without sacrificing standards of instruction.

The repeat periods of instruction were reduced from 1.63 two-week periods per student, characteristic of the regular instruction, to .37 for the experimental classes. Repeats for the experimental students occurred only during the equipment phase of the course where regular instruction was employed.

Actually the reduction in the number of repeats shortened the course length from between 44 and 46 weeks to approximately 36. Based upon the number of repeat periods given in regular classes during the preceding year for each 100 students entering the course, the graduating class would contain 10 students who received 42 weeks of instruction, 41 students who received 44 weeks instruction, and 24 students who received 46 weeks instruction. Twenty-five would have been eliminated. For every 100 students entering experimental instruction, 63 would graduate with 34 weeks instruction, 25 with 36 weeks instruction, 8 with 38 weeks instruction, and 4 would be eliminated.

REASONS FOR THE IMPROVED PERFORMANCE OF EXPERIMENTAL STUDENTS

Improved scheduling appears to be a factor in the improved methods. In the regular course about 20 per cent of the instructional time had been devoted to review and examinations. Although staff size should have permitted a student-instructor ratio of 15 to 1, this had not been previously realized. The scheduling of lectures on theory, laboratory, and mathematics instruction had not been coordinated adequately. The experimental method appears to have overcome these difficulties.

The experimental method did not follow the practice of allocating two days out of ten to review and examination. The time saved was used for more appropriate teaching-learning activities. The experimental classes were 14 students to one instructor. This ratio was well within the school's capacity to support without additional instructors since the allocation for the school was 10 to 1. This was a remarkable improvement over the regular lecture classes of 60 to 1 and the laboratory of 30 to 1. The improved classroom ratio seems to contribute significantly to the improved instruction.

The combining of lectures in theory, mathematics instruction, and laboratory work in a single room under the direction of a single instructor, made functional teaching possible. It is believed that this was one of the most important contributions to the improved method. Combining theory and practical work made it possible for the student to engage in activities that simulated work situations. Thus a close relationship between learning activities and needs was established. Teaching that is closely related to student needs tends to eliminate unnecessary subject matter. The experimental method demonstrated that a considerable amount of subject matter could be omitted without lowering the efficiency of the graduates.

The assumption that the mathematics needed by an electronic technician could be taught with the theory and practical work was proved by the experiment. In only the radar fundamentals phase of the course was there any complaint concerning inadequate preparation in mathematics. Investigation revealed that this was confined to a specific application not understood by the students. In all other phases of the equipment portion of the course, students seemed to have an adequate command of mathematics skills. The significance of this outcome should not be overlooked. In the regular course, 120 hours were devoted to the teaching of mathematics as a separate unit. Teaching mathematics as an integral part of the experimental method accounted for a considerable part of the total saving in instructional time.

The favorable class size and the arrangement of the classrooms are believed to have contributed significantly to the improvement of instruction, by enabling the instructor to move with ease from one student to another with minimum disturbance to others. The classroom and class

size made it possible for the instructor to give maximum attention to individual students, thereby better adjusting the instruction to the needs of the individual.

CONCLUDING STATEMENT

The experiment indicates that it is possible to achieve equally good results by methods that permit a 25 to 30 per cent reduction in instructional time. Although the experiment suggests a potential saving in the number of instructors needed in Service Schools, as well as a saving in the cost of instruction, probably its most significant contribution was demonstration of a way of very significantly increasing the length of the period of utilization of skilled men in the Navy.

CRITERIA FOR THE ADMINISTRATION OF LIBRARY SERVICE IN CHRISTIAN EDUCATION IN THE INDEPENDENT, AUTONOMOUS CHURCH AT THE LOCAL LEVEL

by JAMES HERRICK HALL*

THE PROBLEM

This study is concerned with the development, validation, and refinement of criteria for the administration of library service in Christian education in local churches which are independent and autonomous. It is hoped that it will aid in re-evaluating current church library service in Christian education and serve as a guide for the improvement and extension of that service.

To formulate basic hypotheses concerning the study of church library service, to formulate and validate standards for the administration of church library service, and to develop an instrument by which to evaluate church library service in terms of the criteria set forth were the three major purposes of this study.

THE PROCEDURE

The historical development of church library service was reviewed. From a study of the literature, tentative criteria were formulated. These criteria were discussed with educational consultants and were refined in the light of a preliminary questionnaire which identified local church library situations where large collections and circulations of library materials were reported. A special survey questionnaire, addressed to 96 selected library situations, sought to evaluate library practices in terms of the tentative criteria developed in the survey of related information. All except one of the 96 libraries responded. The data gathered therefrom were tabulated and analyzed.

Normative survey interviews were employed to revise and refine the tentative criteria following the testing of these criteria. Interviews concerning the problem of this study were held in the following centers of library administration:

1. Columbia University Library Science Library, New York, New York.
2. Chicago University Library Science Library, Chicago, Illinois.
3. Peabody College Library Science Library, Nashville, Tennessee.
4. University of Cincinnati Library, Cincinnati, Ohio.
5. Baylor University Library, Waco, Texas.
6. Southern Baptist Theological Seminary, Louisville, Kentucky.

* A.B. 1947, Baylor University; A.M. 1948, The George Washington University; Ed.D. conferred May 31, 1950.

7. New Orleans Baptist Theological Seminary, New Orleans, Louisiana.
8. Southwestern Baptist Theological Seminary, Ft. Worth, Texas.
9. The Divinity School Library, Chicago University, Chicago, Illinois.
10. The American Library Association Library, Chicago, Illinois.
11. The International Council of Religious Education Library, Chicago, Illinois.
12. The Dargan Memorial Library, Sunday School Board, Nashville, Tennessee.

Interviews were held with nine members of the administrative staff of the Sunday School Board at Nashville, Tennessee. The problems were discussed at two regional church library workshops and at local church libraries in Baltimore, Maryland, and Dallas and Ft. Worth, Texas.

BASIC HYPOTHESES OF THE STUDY

The hypotheses of this study are as follows:

1. Church library service administration should be considered as an educational service and the basic purposes, principles, and functions of educational administration should characterize the administration of church library service.
2. Church library service administration should provide for the management, supervision, and evaluation of a learning-teaching aids resource center in Christian education at the local church level.
3. While public education has stated goals which cannot include the distinctive goals of Christian education, the latter should not overlook the opportunity to contribute to the needs of those served by Christian education in the areas of need identified in the stated goals of public education.
4. Church library service carried on in a local church is positively correlated with the leadership training qualifications of the library staff of the given church in the area of professional education qualifications as well as in the area of Christian education qualifications.
5. If it is assumed that church library service is an integral part of the local church program of Christian education, undergraduate and graduate training curricula for Christian education leadership should include courses and/or units on the subject of church library service.
6. Some areas of tentative church library service administration standards may not be validated through the use of normative survey questionnaires and interviews. Such areas should be identified as problems for research techniques other than the normative survey.

HISTORICAL DEVELOPMENT OF CHURCH LIBRARY SERVICE

The historical development of Church Library Service was surveyed and a brief resumé was set forth. The resumé was confined to the

historical development of Church Library Service as recorded in the publications of the Southern Baptist Sunday School Board, Nashville, Tennessee. These historical data are available in the Dargan Memorial Library at the Sunday School Board, 161 Eighth Avenue, North, Nashville, Tennessee. The resumé covers the period of 1923 through 1948.

SURVEY OF RELATED INFORMATION

The survey of related information was drawn from a wide range of information in educational fields which parallel Christian education. The resources of public library, public education, and religious education were used. Reports of studies and administrative practices set forth by the American Library Association, the Cooperative Study of Secondary School Standards, the International Council of Religious Education, and the Department of Church Library Service of the Southern Baptist Sunday School Board were summarized in this study. These reports form a frame of reference for the tentative criteria which were developed in the areas of church library administrative purposes and principles, management, supervision, and evaluation.

THE DEVELOPMENT OF THE CRITERIA

The criteria are set forth as standards by which to determine the efficiency of library administration practices in Christian education in the independent, autonomous church at the local level. The statement of these criteria follows hereinafter.

Criterion One

Church library service purposes should be consistent with the general aims of education and with the specific aims of Christian education. While administration as a means of achieving this service must also be consistent with Christian education, efficient administration will be consistent with educational principles the soundness of which has been established objectively.

The specifications needed to satisfy this criterion follow:

1. Church library administration should afford activities and services to encourage and assist the church administrative and organizational leadership to grow intellectually, educationally, and spiritually.
2. Church library administration should be designed to increase knowledge, improve understanding, enlarge appreciation, refine skills, and develop good habits of utilization of learning and teaching resources.
3. The administration of library service in Christian education should seek to recognize the competency of the individual under God in religion.
4. The administration of library service in Christian education should

seek to implement the basic aims of education and the distinctive aims of Christian education.

5. The administration of library service in Christian education should develop, utilize, and conserve the values of interaction between and among all levels of Christian education service.

6. The administration of library service in Christian education should be integrated with and a part of the total program of education in the local church and in the denomination.

7. The administration of library service in Christian education should be under the authority and financial support of and responsibility to the local church.

8. The administration of library service in Christian education should help to supply means for meeting the felt needs of the individuals and groups who make up the local church.

9. The administrative leadership—the staff—in library service in Christian education should be capable, trained in administrative skills, and conversant with educational theory and practice.

10. The administration of library service in Christian education should initiate, carry on, improve, and appraise the service of a resource center for learning and teaching aids in the local church program.

Criterion Two

The administration of library service in Christian education should design, operate, and measure the organization and disposition of men and materials so that church library service may function efficiently as a resource center of learning and teaching aids.

The specifications needed to satisfy this criterion follow:

1. Good management in church library service should be guided by sound principles of planning.

2. In the organization and disposition of personnel in church library service administrative management should be guided by principles of good human relations in seeking to implement the purposes of the program of Christian education.

3. Good church library service administrative management should operate under an environment which contributes to the motivation of learning and teaching.

4. Good church library service administrative management should design and operate a sound basis for the objective selection of materials to be utilized in the resource center for learning and teaching aids.

5. Good church library administrative management should design and operate an effective resource center for learning and teaching aids.

Criterion Three

The administration of library service in Christian education should design, operate, and measure adequate provision for the improvement,

through learning, of all personnel who serve and are served by the church library.

Specifications needed to satisfy this criterion follow:

1. The patterns of public library, public school, and denominational supervision and educational guidance should be considered as resources to aid church library service.
2. The administration of library service in Christian education should develop, execute, and weigh a comprehensive plan for the supervisory function of church library leadership.
3. Organized supervision in church library administration should be coordinated at local, regional, state, and national levels and cooperation therein should be upon a voluntary rather than a coercive basis.
4. The administration of church library service should provide supervision through library use, reference, curriculum enrichment, and guidance services which are consistent with the general characteristics of learning and the implications thereof upon teaching.
5. Where church library administrative supervision engages in supervisory planning, induction and in-service training, curriculum enrichment, and related supervisory procedures, techniques should be used for specific goals and personnel involved should be suited to the specific tasks assigned.

Criterion Four

The administration of church library service must make adequate provision for evaluation.

The specification needed to satisfy this criterion follows:

1. In church library administrative evaluation of the criteria dealing with administrative purposes and principles, management, and supervision, areas should be identified where each specification may be measured and a practical checklist therefor should be developed.

FINDINGS

The data made available by 79 of the 95 responding local church librarians reported the library practices of churches whose combined membership was 91,250, whose combined number of library books was 83,172, and whose combined library circulation for 1948 was 115,936 books. There were 29 respondents who had taken study course training as provided by the denomination but had not taken professional courses in education at the college level. The remaining 50 respondents had taken professional courses in education at the college level as well as the denominational study courses. Data were also made available through survey interviews with a wide range of leaders and conferees in education and library service. Some of the significant findings which

supported, differed with, or suggested refinement of the criteria and specifications are set forth as follows:

Criterion One

The data tend to show that church library administration seeks the **improvement of leadership** in Christian education but recruitment of more capable leaders is not greatly aided by church library service.

The service seems to be designed to increase knowledge, improve understanding, enlarge appreciation, refine skills, and develop good habits of library utilization. However, the qualifying sections of the checklist questions hereupon show little practice.

The libraries reported that the principle of the competency of the individual in religion is recognized. Despite the recognition of this competency in principle, the practice of providing access to the choices which may be made in religion was not scored as high as was the basic theory.

Reporting church librarians feel that they conserve the values of public education but that public education fails to reciprocate and conserve the values of Christian education. They give considerably higher emphasis to the distinctive aim of Christian education than to the basic purposes of public education as set forth by Carr.

The practice of developing, utilizing, and conserving the values of interaction between all levels of Christian education service is wide. Over 40 per cent of the reporting librarians indicated that they considered the denominational agencies more interested in their own program promotion than in helping the local library service to meet its problems.

The administration of library service is only partially integrated with the total program of education in the local church and in the denomination. Weak areas are the range of resources afforded in the library, status of the library program, and provision for information on educational guidance.

The church libraries surveyed were administered by, supported by, and responsible to the local church. They were not ends in themselves but were means of meeting felt needs in Christian education.

Practices in leadership training were significantly inadequate. While the church library is a resource aid for Christian education, training in Christian education is not required for librarians and far too few have a wide range of such training. While church library service is an educational service for Christian education, training in public education and/or library science is not required and comparatively few librarians reported such training. In the light of the tentative criteria used, those respondents with professional education as well as study course training attained higher evaluation scores than those with study course training alone.

The church libraries surveyed do not operate significantly as resource

centers for all learning and teaching aids. In the majority of instances audio visual aids are cared for as a separate service.

The data reveal that the criteria, specifications, and checklist questions need revision and refinement to eliminate ambiguity and to qualify the checklist for more efficient use in evaluation. Significant refinements are set forth in the conclusions of the study.

Criterion Two

The concept of management planning was reported as essentially limited to that afforded by the *Church Library Manual*. Therein the *representative* committee is recommended. The respondents were almost totally unfamiliar with the *creative* committee. The principles of good human relations seem to obtain. Effective factors in motivation are in evidence but there seems to be a lack of understanding of the significant differences between motivation and promotion. The basic principle for the selection of materials seems to be negative censorship. Approved book lists are generally used. While this study was not centered upon the technical operation of the library, data show that public library and public education practices obtain in church libraries with the exception of the utilization of community resources.

Refinements hereupon were suggested and are reflected in the conclusions of the study.

Criterion Three.

The church libraries surveyed make very little use of the supervisory services of public library, public education, or secular commercial concerns. Such service improvement as is practiced is based essentially upon help from the denomination. Supervisory planning is not understood and the role of research is employed only in a limited fashion. Likewise, coordination of supervision is not understood. The range of supervisory services is limited. The supervisory techniques employed are basically those of induction and in-service training and are limited to the study of the manual, either in local church study courses or in regional workshops.

While Criterion Three seems to be in operation less than Criteria One and Two, it cannot be considered invalid upon a basis of this study. Further study and refinement by other techniques of research should be attempted.

Criterion Four

The evaluation of church library service has not been practiced. This study has initiated research in this area. The evaluative instrument developed in this study should be refined and further evaluation attempted. Tentative refinements are included in the study as bases for further research.

GENERAL CONCLUSIONS

Some of the more significant conclusions dealing with the hypotheses include the following:

Hypothesis One.—Upon a basis of the evaluation of 79 local church libraries in which 59 per cent of the practices were reported as followed, this hypothesis tends to be valid.

Hypothesis Two.—Since the practices of the church libraries herein evaluated are subject to objective measurement as management, supervisory, and evaluative functions of church library administration, this hypothesis tends to be valid.

Hypothesis Three.—In the area of goals derived from public education, a majority of the respondents gave evidence that the goals were recognized. Thus, it seems that Christian education does not overlook the opportunity to contribute to the needs of those served in Christian education in the areas of public education purposes.

Hypothesis Four.—The over-all score of the 79 respondents upon leadership training was 57 per cent. The over-all score of the 79 respondents upon library practices set forth in the checklist was 59 per cent. Leadership training was displayed as a tendency to improve the effectiveness of church library service. Leadership training in professional as well as Christian education was shown to tend toward greater efficiency in church library service than leadership training in Christian education alone.

Hypothesis Five.—The survey of related information demonstrated that a very limited emphasis is given in undergraduate and graduate training curricula of the denomination for Christian education leadership. There is need for additional research by other techniques in this area.

Hypothesis Six.—Since this study identified significant areas of church library service which cannot be measured by normative surveys and interviews, this hypothesis tends to be valid.

RECOMMENDATIONS

The recommendations of this study are set forth hereinafter in the four areas of the criteria as follows:

1. *Criterion on Administrative Purposes and Principles.*—Church libraries should provide a written set of helps to guide in the use of the library. Experimental research should be used to develop these guides and measure their usefulness.

All of the members of the library staff should know and understand the basic beliefs of the organization in which the library serves.

In subsequent evaluation of church library service, care should be exercised to balance grading which measures reciprocal practices. Less subjective scoring should be practiced.

More definite cooperation between Christian and public education leaders in community education projects is suggested as a remedy for the lack of mutual understanding of the goals of these two educational groups. Such cooperation might include curriculum development or school-community activities.

The *Church Library Manual* should be revised to include a comprehensive and constructive approach to the question of public education goals.

Since so great a part of the Christian education program is based upon stewardship and giving, the church library should give more emphasis to a Christian approach to the public education goal of *economic efficiency*.

The denominational agencies should study the significance of the data which reveal that the 79 respondents to this study grade their cooperation with the denomination at 88.6 per cent while the denomination's comparative interest in the local church and the denomination's program was graded at 58.2 per cent. The difference seems to be significant and to be worthy of objective research.

Experimental research might measure the effectiveness of a centralized program of library service as compared and contrasted with a decentralized program of library service. In such a study the experimental group would conduct a library program in which resources other than books would be administered through the library.

Research, perhaps of an experimental type, should be attempted to evaluate the effectiveness of the church library providing catalogues and descriptive literature about denominational and other schools and colleges. Church libraries should make more effective provision for educational guidance.

The financial support of church libraries should come from the church budget and should compare favorably with quantitative standards set forth by public and public school library administration.

More adequate provision should be made through research to identify the felt needs of those who are served by the church library. The independent, autonomous church which believes in freedom in religions should help those whom the church serves to practice religious freedom as they learn of the Kingdom of God which is *within the individual*.

Church libraries should provide special services to meet the needs of the handicapped such as the blind, the deaf, the crippled, and the underprivileged. Provision made for such special services should be based upon the findings of further research in the field of church library service.

In church libraries where both secular and Christian education emphasis is coordinated, librarians should be recruited who have some basic public education professional training where such leadership is available.

The program of leadership training at the academic level in Christian education should include the study of library administration. Further research should be projected to weigh the values of providing such training, especially in the seminaries where the clergy and religious educational directors are trained.

Objective research should be continued by church library leadership to test the value of measurement in church library service. The entire field of administration, including management, supervision, and evaluation, should be studied and other standards developed, tested, and validated. Further testing and revision of the standards herein set forth should aid in the improvement of church library service.

2. *Criterion on Administrative Management.*—Those who plan church library service should be trained in the techniques of planning as well as in the *Church Library Manual*. The orderly development of man's understanding through experience and the enrichment of his mind deserves sound planning. The church library functions as a resource aid for the enrichment of the lives of Christians. Sound planning should characterize the administration of church library service.

The manual and other denominational literature upon the church library should be enriched from further research upon the techniques for committee work in administration. The summer workshops of the denomination should experiment in this research area and validate a set of procedures therefor.

If church librarians should know how to carry out their duties and if the scope of their responsibility touches the entire program of Christian education, then church librarians should have a comprehensive knowledge of the Christian leadership program advocated by the denomination.

Adequate provision should be made in local church library service in the areas of housing, equipment, environment, program, and promotion so that the use of library services will be initiated, directed, and sustained in a highly motivated atmosphere of learning and teaching.

The selection of materials for the library in Christian education should be studied by the denominational agencies and the local churches. A statement of principles thereon should be formulated and tested in experimental techniques of research. A broader basis than negative censorship should be found. The selection of materials should be for Christian educational ends. Selection should be made by personnel capable of weighing the educational values of the materials. The whole area of materials selection should be explored in research from the level of the seminary curricula to the local church library committee. Those who will lead the churches as clergy and those who will administer the program of Christian education and the church library should comprehend and utilize a sound basis for the objective selection of materials.

The problem of censorship and the *proscribed list* in the church library should be considered in subsequent research.

Further research should evaluate the significance of guided trips as a resource for learning and teaching in Christian education.

Research should be continued in the area of circulation as a problem in church library service where reference assignments are on a voluntary basis. How shall rules be formulated and carried out in a non-coercive group? This is a significant field for future study.

Research should be projected in the field of the organization and classifications of materials in the church library. It should be a purpose of such research to determine if the usual classifications of knowledge apply to a Christian education library where they may have no relevancy. Can a standard public library system be imposed upon Christian education library service? What nuclei of topics should be used for accessions of titles in church libraries? Significant problems for further study are in these areas.

3. *Criterion on Administrative Supervision.*—Research should be continued in the area of resource aids for supervision in church library administration.

The *Church Library Manual* should be revised and should give adequate, reliable, and constructive appraisal of resource aids for church library service other than denominational services. Too many respondents in this study annotated the question concerning the American Library Association, "Never heard of this organization. Would appreciate their address." Such a condition should be remedied.

Study should be made of bibliography development as a resource guide in Christian education. Likewise, research should be used to aid local church libraries in the development of techniques of objective measurement to be employed in the local program of church library service.

Supervision should receive more emphasis in the administration of Christian education. The denomination should study this area of administration and set forth curricular offerings which will be adequate for the need in this field.

In compliance with suggestions of conferees and based upon field observations, church libraries should provide an enriched reference service for Christian education. Many churches are located where a public library is not available. Many members of the churches cannot afford reference books. In addition, the denominational agencies responsible for Christian education leadership training should conduct research and develop basic principles and practices for the functions of the church reference librarian. The findings of studies in this area should be incorporated into the Christian education curricula at the college level and into the study course curricula at the denominational level.

Further research should test the effectiveness of various administra-

tive techniques other than the representative committee. Since supervision is a service to teaching based upon learning and since learning involves activities that are of a creative nature, special research should be directed to the study of the creative committee as an administrative technique of church library service.

4. *Criterion on Administrative Evaluation.*—Tentative standards were formulated in this study as the bases upon which evaluative measurement of church library administration might be projected. These standards were revised upon a basis of survey interviews, used as resources for the evaluation of a select group of church libraries and revised again upon the basis of the findings derived from their use in a survey questionnaire. These criteria as revised are recommended as the tentative bases for further study of church library service, for the improvement of the effectiveness of church library administration, and for the tentative definition and qualification of areas in which church library service may be evaluated.

A practical check list was formulated for the areas of evaluation of the criteria. The check list questions were revised in the light of survey interviews, a search of the literature, and use in measurement of church library administration. The check list is recommended as a tentative instrument of measurement. The check list is suggested as a resource to guide in the improvement of church library service.

CONCLUDING STATEMENT

Obviously the research reported herein can be only a beginning of an attack upon this problem. The criteria developed in this study should be subjected to refinement in the light of experimental research and the evaluation of practices in accordance with the criteria. Of course, no criteria of administration are ever finished. They must grow and develop in the light of a growing body of experience. Nevertheless, nothing is ever done without a beginning. It is hoped that this study has made such a beginning.

MANAGEMENT PLANNING IN SECONDARY SCHOOLS

by HAROLD MAURICE WILSON *

THE PROBLEM

The purpose of this study is to develop tentative criteria for the guidance of management planning. Incident to the main purpose of the study, planning practices in representative schools having reputations for good management were surveyed. From the criteria which were developed and from the results of the survey, an evaluative check-list was formed.

PROCEDURE

The library research drew upon the business, industrial, and governmental literature produced by American and foreign writers. The collections of the Library of Congress, the Library of the U. S. Office of Education, the Library of the Department of Agriculture, the Library of the National Education Association, and the Library of The George Washington University were drawn upon in this phase of the study.

From the results of the library research tentative criteria were formulated. These criteria were refined and validated by repeated criticism and revision in conference with planning specialists, professors of education, and administrators on the job.

In terms of the tentatively validated criteria, a lengthy survey instrument was prepared. Specialists in the U. S. Office of Education and the Executive Secretary, National Association of Secondary School Principals, National Education Association, suggested certain principals distributed throughout the 48 states, who had the reputation of doing a good job of administering their schools. From the names suggested, 266 principals of schools enrolling 500 or more pupils were selected. Despite the fact that the questionnaire required from one to three hours for completion, 244 or 92 per cent of the questionnaires were returned. The high percentage of return indicated the interest with which the questionnaire was received.

The returns from this questionnaire survey were used further to validate the criteria. The returns were also valuable as samples of current planning practice in well administered schools. Additional validation of the criteria was provided by group discussions with principals in Washington, D. C.; Virginia; and Maryland; and by continuing interviews with various specialists in planning and education.

The survey instrument was then transformed into a check-list for management planning.

* A.D., A.M. 1948, The George Washington University; Ed.D. conferred May 31, 1950.

RESULTS OF THE STUDY

Selected References from the Library Research.—The library research yielded very little detailed information on the subject of educational administrative planning. None of it was intended to concern itself with the subject in a comprehensive manner. It was helpful, however, in providing philosophical implications for this study and in giving an indication of the extent to which promising planning practices were developing and the nature of the new departures. Some of the references which were most helpful are listed in Chapter I and in the Bibliography. These references are drawn from business, industrial, governmental, and educational management literature.

Tentative Criteria for Management Planning.—The criteria and their elaborating specifications as they were eventually formulated are set forth below. Each specification is discussed in the dissertation; this discussion is omitted in the summary for the sake of brevity.

Criterion One

Management planning should grow out of an appropriate philosophic background oriented toward democratic, socially integrated, and educationally efficient planning.

Those concerned with management planning need to be guided by a philosophic frame of reference. When appropriate, such a frame of reference furnishes planners with important directional guides which point the way toward which planning should move. Such a background acts as an evaluative field against which projected activities can be appraised for harmony. It also is a powerful integrating factor, since those operating within its framework can hardly escape its coordinating influence.

An appropriate philosophic background may be achieved in many ways and will rightfully vary from school to school according to the needs and goals of each school. Many of the elements of such a background, however, should be thought of as dynamic constants which remain relatively the same in all schools. The specifications listed below seem to contain essential common elements and should hold if the criterion above is to be realized.

Specification 1: The philosophic background should be compatible with the objectives commonly held for education in our democracy.

Specification 2: Principles that promote effective democratic interaction should be a part of the philosophic background.

Specification 3: The philosophic background should include a realistic conception of the values and limitations of group processes and of individual expertness and of the planning levels and conditions to which each is best suited.

Specification 4: The philosophic background should engender perspective.

Specification 5: Planning within the school should be articulated with the planning of other social institutions.

Specification 6: Planning within the school should be consistent with the educational plans of the school system and of the state—this consistency, however, ought not to hamper growth or limit creative action.

Specification 7: Planners should recognize that the school is influenced by a host of impinging forces originating in many cases outside the school itself.

Specification 8: Planners should recognize the unitary nature of the educational task.

Specification 9: The ends sought by planning should justify the expenditure of time, energy, and material resources exhausted in the planning process.

Specification 10: Planning should promote efficient action in the total school situation and be governed by a concept of educational efficiency.

Specification 11: The philosophic background should be understood and accepted by the planners.

Criterion Two

The experiences and abilities of all available personnel should be utilized as fully as possible in management planning.

The experiences and abilities present within and contiguous to the management planning situation should be drawn into the planning regardless of the position of their possessors. Members of the professional and non-professional staffs, the student body, and laymen in the community possess resources which should be utilized by the administrator in planning. The advantages of such a course of action are readily apparent. A full utilization of personnel resources increases the range of experience upon which planners can draw for practical guidance and information. It increases the potential creative power which can be brought to bear on management problems; since group thinking and diverse experimental backgrounds do much to encourage creative solutions. In addition, a course of action of this sort allows for democratic participation of personnel in the planning which affects them, and helps build attitudes that facilitate the execution of the plan. When the specifications below are met, much will have been done toward the full utilization of personnel in planning.

Specification 1: Those affected by the planning should have a voice in the planning commensurate with their capabilities for productive participation.

Specification 2: Planning (since it is a creative endeavor) should utilize the maximum range of personnel experience available.

Specification 3: Participants in planning activities should provide a representative range of pertinent expertness.

Specification 4: The school administrator should be thoroughly familiar with the experimental backgrounds and the abilities of the personnel of the school and utilize them in planning.

Specification 5: The school administrator and other members of the school staff should be familiar with the resources present in the community surrounding the school and utilize them in planning.

Specification 6: The school administrator, while utilizing the abilities of the school's personnel for planning purposes, should himself remain an active planning agent.

Criterion Three

Management planning should be provided an organizational outline which is functional, flexible, and an integral part of the school's administrative structure.

Management planning activities should be conducted through a planned program. It is only when considerable thought has been given to all aspects of management planning requirements and an organization to meet these requirements has been designed, that an administrator can be certain that problems arising in all essential areas will receive attention. Such an organization helps eliminate marginal planning activities and adds to the efficiency of management. Equally important, it specifies a series of planning duties and relationships in such a manner that personnel are able to know what is expected of them and others. It very logically removes planning from the realm of expediency and develops a plan for planning.

The specifications below offer considerations concerning such a planning program.

Specification 1: Planning requirements should be met by action within a predetermined organizational outline which is familiar to all staff members.

Specification 2: The organization for planning should be functional.

Specification 3: The goals held for, and the conditions surrounding each planning activity should be allowed to determine the personnel and the type of planning used.

Specification 4: Whenever possible, planning activities should be scheduled during school hours and included in the work load of those so engaged.

Specification 5: The administrator should maintain enough control over planning activities to enable him to discharge his legal responsibilities.

Specification 6: A central body should be charged with directing and coordinating planning activities.

Specification 7: Planners should be definitely informed of the nature of their assignments, the planning duties expected of them, and the administrative arrangements made to help carry them out.

Criterion Four

The attitudes, skills, and procedures desirable for management planning should be acquired and used by all participants.

An appropriate philosophic background, a determination to use fully personnel resources, and an efficient organizational outline are desirable and necessary but will not be productive unless the people engaged in planning are equipped to do the job. In order that personnel who are to participate in planning have a reasonable chance of success in their activities, they need to possess desirable attitudes and skills and be acquainted with certain planning procedures. In the last analysis the quality of personnel functioning in these areas is, if anything, of greater importance than any of the other requirements set forth in the preceding criteria. The administrator of a large secondary school unlike administrators in industry, for instance, has little opportunity to shop around for personnel who are especially talented in these areas. His personnel have long tenure and he must utilize them without the expectation of a selective turnover, especially since these attributes are not primary considerations in their employment. Hence, it is important that he identify the qualities and procedures desirable and help personnel acquire and gain increasing power in utilizing them. Some of these attitudes, skills, and procedures are specified below.

Specification 1: Personnel participating in planning should be afforded guided experiences in acquiring desirable attitudes, skills, and procedures.

Specification 2: Responsible attitudes and understandings concerning planning duties and relationships should be developed.

Specification 3: It should be commonly understood that planners should seldom rely on compulsion to keep their plans in operation.

Specification 4: An understanding of the interdependence of past, present, and future plans should be developed.

Specification 5: Those engaged in planning should accept resistance to change as normal and attempt to anticipate the reasons for and the results of such resistance.

Specification 6: Skill should be developed in promoting intercommunication among planning personnel.

Specification 7: Skill should be developed in improving methods of group functioning.

Specification 8: Skill should be developed in detecting and using significant sociometric factors of the planning group and of the school community.

Specification 9: Skill should be developed in integrating the ideologies, needs, and goals of the participants with the common goals of all-school planning.

Specification 10: The purpose of each planning activity should be clearly understood.

Specification 11: Those engaged in planning should keep their attention focussed on the planning objective.

Specification 12: Skill in using problem solving processes as a method of solving planning problems should be developed.

Specification 13: Since everyone cannot engage in every planning activity, some means of reporting progress back to the individuals and groups not participating should be provided.

Specification 14: Important experiences and abilities possessed by those not directly participating in the planning should be brought to bear on the problem.

Specification 15: The form of the plan itself should facilitate the execution of its purpose.

Criterion Five

The entire management planning program and the plans developed through its activities should be subjected to continuous, cooperative, and comprehensive evaluation.

The planning program should be judged as successful to the extent that the plans themselves are successful in making actual service contributions to instruction. Evaluation is essential to determine whether these contributions are being made both in the quantity and quality necessary to justify the existence of the present form of the program. Such evaluation should be continuously and thoroughly applied to all phases of planning.

The specifications below set forth considerations which will help make such an evaluation productive.

Specification 1: The objectives of management planning should be subjected to evaluation in terms of their harmony with the objectives of education and the philosophy of the school.

Specification 2: The means used to achieve progress toward the objectives held for management should be subjected to evaluation in the light of appropriate criteria.

Specification 3: The evaluation of plans and activities should be conducted according to a systematic procedural plan. The following series of activities is recommended:

- a. State the purpose of the plan or activity as clearly and definitely as possible.
- b. Define the purpose in terms of desired behavior.

- c. Identify situations in which the desired behavior may be observed.
- d. Select or develop evaluative instruments or techniques appropriate to the purpose and the behavior which are to be evaluated.
- e. Use the instruments or techniques in the identified situations to collect evaluative data.
- f. Subject the data to study and interpretation.

Specification 4: The evaluation of planning should be a cooperative process.

Specification 5: The evaluation of planning should be a continuous process.

The Findings of the Questionnaire Survey.—The amount of promising management planning being carried on in the public schools is somewhat greater than was expected. About 10 per cent of the selected schools follow in practice most of the criteria and their elaborating specifications. These schools were widely distributed throughout the country. They were not confined to any one section of the country and did not cluster together. Thus, geographical location could not be used to explain their preeminence. Probably the best explanation for the superiority of these schools lies in the quality of the administrative leadership which is provided them. They have principals who believe in planning and who do something about it in a comprehensive manner.

Another group of schools—about 20 per cent—function well in certain areas but are doing nothing much about other areas. It may be that these areas are being neglected because they have not been called to the attention of the administrator. The principals in this group are interested in planning and are doing a fine job. Their planning could be improved by attention to the shortage areas. This study should be of help to this group by directing their attention to the neglected areas.

The remainder of the schools are functioning rather haphazardly. They do certain things well but neglect important considerations in several areas. Evidently not much prolonged consideration and study have been given to planning. The administrator may have only recently launched the planning program or it may have grown piece-meal without any special attention having been given to it. This study should help these administrators by suggesting the comprehensiveness of the planning function.

In general, utilization of the criteria is about 70 per cent. Some of the major areas which are being most often neglected follow.

A need exists for a wider use of the various types of personnel available for planning. Administrators evidence their awareness of the value of teacher participation in planning by utilizing their abilities in many kinds of planning activities. They do not, however, utilize the non-professional staff, members of the student body, or members of the community to the extent that seems desirable. Interested laymen can render

valuable planning services but in only a few schools are they used to any extent.

More attention needs to be given to the organization of planning activities. The personnel now being used probably could be utilized to better advantage if more of the schools possessed an organizational frame-work within which their activities could be ordered and related. Many schools have given very little consideration to this aspect of planning and their organization or lack of organization is a result of chance. A careful consideration of the planning organization should pay dividends in the more effective use of personnel.

Planning personnel should be more concerned with the ultimate effect of their plans upon human behavior. Too often the individual is submerged in the planning process. More attention is paid to expediency, logic, so-called efficiency, and professional status than to the people to be affected by the plan. The activities which demonstrate this consideration should be extended to more schools.

Planning activities could also be made more effective if the findings of group dynamics research were put to use. The skills needed by individuals as members of groups and the methods of improving group functioning are vital planning skills and need to be used more often by administrators. Indeed the whole area of skills needed for planning requires attention. Development of these skills should be an important part of the inservice training program of the school. Too often they are assumed to be present and even when obviously absent no planned program of training is utilized to remedy the shortage.

Another neglected area of importance is that of evaluation. Planners need to be more evaluation conscious; neither planning activities nor plans are being evaluated to the extent that they should be. The two-fold nature of this evaluation needs to be more widely appreciated—the evaluation of objectives and the determination of the extent of progress toward these objectives. The two-fold nature of the determination of progress also needs to be more widely realized—the evaluation of the planning activities, a constant process; and the evaluation of the plans or programs of plans, which, although it has elements of continuity, is a more periodic process.

The questionnaire survey called special attention to the need for extending a more intensive use of these activities in particular as well as revealing the need for a more general use of all the others.

A Suggested Check List for Management Planning.—The criteria as developed are guides for management planning. They are not, however, readily usable until translated into action patterns. It is easy to assume that if a school is doing even a little in regard to a criterion that the criterion is being met. If, however, certain action patterns are specified in the form of a check list, more definite indications of use or neglect in

regard to a criterion can be observed. The instrument designed for this purpose is a check list, not a rating scale. No norms or weighting of items have been attempted. Its thirty pages consist of seventy-nine questions containing 320 response-items most of which are to be checked on a four-point scale. The check list is similar to the questionnaire but contains many modifications made as a result of applying the questionnaire. Thus, it has been refined and reorganized for the specific purpose of providing principals and other school planners with a means of determining the status of their own planning activities.

THE MANAGEMENT OF ELEMENTARY SCHOOLS

by RALPH FREDERICK WILLIAM BRIMLEY •

THE PROBLEM

This is a study of the management of elementary schools. Management, as applied to elementary schools, is the administration incident to efficient operation of the school in accordance with the legal authority and responsibility vested in the principal and in conformity with sound educational theories.

Administration, as used in this study, includes management, supervision, and evaluation. The study is concerned with the first phase of administration, management.

For purposes of analysis the study has been broken into the following subproblems of elementary school management: (1) school plant and grounds, (2) instructional supplies and equipment, (3) school assembly, (4) guidance, (5) public relations, (6) individual school funds, (7) library, (8) pupil services, (9) student government, (10) lunchroom, and (11) school records.

PROCEDURE

As a result of a careful study of the literature of elementary school administration, criteria of elementary school management were formulated for each of eleven areas of management. The first step was to state the fundamental assumptions basic to each area. Next, the criteria, followed by their specifications, were drawn up.

The criteria were submitted personally to leaders in the field of elementary school administration. Conferences with these leaders were of substantial length, usually two or more hours. The criticisms and suggestions were carefully noted.

To assist in the validation of the criteria a check list to determine practices was prepared for each area. This check list was sent to the principals of well-managed schools. It was assumed that if the criteria were sound, they would be found in operation in these schools.

A total of 260 double postcards were sent out to principals asking if they would be willing to assist in the study. Of this number 180, or 69 per cent, were returned.

Check lists were sent to 175 principals who had said that they would participate in the study. Several principals had to be reminded in order to get the check lists returned, but final returns were 90 per cent of those sent. Fourteen more were returned too late to be tabulated.

• B.S. 1928, North Carolina State College; A.M. 1940, University of North Carolina; Ed.D. conferred November 11, 1950.

CRITERIA

As a result of (1) an examination of the literature in the field of school management and (2) discussions with leaders in the field of elementary school administration, the following criteria for the determination of effective elementary school management were formulated. A few of the conditions necessary to meet the criteria are also noted.

THE MANAGEMENT OF THE SCHOOL PLANT AND GROUNDS

Criterion One

The management of the school plant and grounds should be such that instruction is facilitated.

Routines of building maintenance and cleaning should not interfere with instruction. Building changes, repainting, alterations, and additions should be planned with the view to providing the best possible environment as a background for learning.

Criterion Two

The management of the school plant and grounds should be such as to protect the health and promote the safety of all personnel.

Alterations and additions to the buildings and grounds should be planned with special attention to the promotion of healthful and hazardless conditions. Provision should be made for the routine inspection of the buildings and grounds and for action to eliminate health and safety hazards. Of course, adequate heat, ventilation, illumination, and water should be provided at all times. Provision must be made for the safe removal of all personnel in case of fire.

Criterion Three

The management of the school plant and grounds should be such as to protect the building and grounds against vandalism.

In addition to adequate and regular inspection, efforts should be made to improve public attitudes toward the protection and care of school buildings.

Criterion Four

The management of the school plant and grounds should be such that maximum efficient use is promoted.

Definite scheduling should be made in the use of all rooms. Management of the building should provide for the use of the premises by community groups.

THE MANAGEMENT OF INSTRUCTIONAL SUPPLIES AND EQUIPMENT

Criterion One

The management of supplies and equipment should facilitate instruction.

Teaching time should not be robbed to care for the routines of supply and equipment management. Supplies and equipment should be of the quantity and quality necessary for the job at hand. Each teacher should know how to use skillfully the supplies and equipment available.

Criterion Two

Each teacher should know what supplies and equipment are available for his use.

Each teacher should possess or have ready access to a list of instructional materials on hand. This list should be revised periodically with supplementary announcements of changes and added materials.

Criterion Three

Supplies should be readily available to the teacher as needed, and getting these supplies should require a minimum of time and effort.

A stock of supplies used in the school should be maintained in quantities sufficient to carry the school through the replacement period. A suitable place should be provided for storage of a stock of supplies within the school. Supplies should be sent to the teacher on requisition, and should arrive at or before the time specified by the teacher.

Blank forms for the requisition of supplies should be given to the teacher with a clear explanation of how these forms are to be used. A petty cash fund should be set up for all teachers to permit them to purchase small items which are not stocked by the central agency of the school.

Criterion Four

Every teacher should know or have ready access to knowledge of the balance remaining in her instructional supply fund so that she may plan effectively.

A card or ledger sheet should be kept for each teacher showing the amount spent and the unexpended balance. The teacher should be informed periodically of her unused balance.

Criterion Five

Purchase of supplies should be in accordance with sound business principles.

Purchases should be made in quantity lots on a bid basis, and materials should be purchased according to approved specifications. Originally specifications of materials should be defined by those persons best qualified through knowledge gained in their use.

Criterion Six

The principal should establish a system that will enable him to fix responsibility for the care and economical use of materials without undue use of time and effort.

All persons must have clearly defined responsibilities in regard to the proper use of materials and supplies. Laws and school board regulations should be known and understood by teachers, pupils, and administrators alike.

THE MANAGEMENT OF SCHOOL ASSEMBLIES

Criterion One

School assemblies should be managed in a democratic manner.

The basic outline of the year's program should be an outgrowth of cooperative planning of the school staff. Assemblies should be planned for the benefit of the audience as well as the performers.

Criterion Two

School assemblies should be planned as a part of the total school program.

All programs should provide educational benefits in keeping with the aims of the school and should grow out of classroom work. They should provide for wide participation and be held at definitely specified times. Provision for the satisfactory movement of pupils between classrooms and assembly hall should be made. Without adequate plans, undesirable concomitant learning may offset the desirable outcomes of the assembly program.

Criterion Three

The school assembly program should include as many forms of presentation as possible.

Variety should grow out of the different educational objectives of assemblies.

Criterion Four

So far as is possible, school assemblies should be free and accessible to all pupils.

Pupils ought not to be excluded because they cannot pay admission fees. Outside programs or special entertainment should be free and accessible to all pupils.

THE MANAGEMENT OF GUIDANCE

Criterion One

Guidance is the responsibility of the whole school staff under the direction of the principal.

The principal should assume responsibility for the entire guidance program.

The major portion of the guidance functions should be provided by the classroom teachers. Teachers need to be instructed in their guidance responsibilities. They cannot do the job unless they know what is to be done, and are given needed instruction in procedures.

Criterion Two

All resources that have guidance values should be utilized.

Community social agencies should be fully utilized.

THE MANAGEMENT OF PUBLIC RELATIONS

Criterion One

The people of the community, especially the parents, should be kept fully informed concerning the school.

There should be adequate provision for the collection, processing, and dissemination of information. In school interpretation the greatest emphasis should be placed upon purposes and long-term goals. The information disseminated should present a true picture of the school.

Criterion Two

The program of public relations must win the sympathy of the public.

The school should understand and support the worthy aims of the community. If the school is to enlist the active support of the public for its projects, it must similarly support some of the worthy projects of the community.

Criterion Three

Fruitful participation properly controlled should be encouraged.

School planning should include wide community participation and available talents found in the community should be utilized fully. Bad

public relations are always caused. The best way to improve them is to ferret out the causes and systematically work for their removal.

THE MANAGEMENT OF INDIVIDUAL SCHOOL FUNDS

Criterion One

Fund activities should be consistent with the aims and objectives of the total instructional program.

The planning, raising, and spending of school funds should take as little instructional time as possible. Wherever possible, fund-raising activities should be utilized to motivate and make more realistic the instructional program.

Criterion Two

The handling of such school funds should be an enterprise shared jointly by all those interested in the program of the school.

Although the principal is ultimately responsible for the management of all school funds, he should delegate as much as possible of this responsibility. For instance, all interested groups should have an opportunity to share in the planning.

Criterion Three

Adequate provision should be made for the accounting and auditing of all funds.

A simple, definite, uniform system of accounting should be effected and rigidly followed. All funds should be banked; payments should be made by check; and accounts should undergo an independent audit periodically.

THE MANAGEMENT OF THE LIBRARY

Criterion One

The library should be a service agency whose function is to organize and make accessible to teachers and pupils many kinds of study materials.

The main function of the library is the distribution of books to the places where they can be used most effectively. It should house and make available for use materials other than books, such as audio-visual and other teaching aids.

Criterion Two

Definite instruction in the use of the library and library materials should be given.

Teachers should be informed of the services available and how to use them. Regular periods of library instruction should be included in the school program. There should be instruction in study skills.

Criterion Three

The library should be under the direction of trained library personnel, responsible to the principal.

In order for the school to secure the maximum efficient use of the library, trained library personnel is needed.

Criterion Four

Accepted library practices should be used.

The central library should supply books to the classroom libraries and borrow books from other public collections.

THE MANAGEMENT OF PUPIL SERVICES

Criterion One

Pupil services should be encouraged as long as they provide educative experiences.

The organization of pupil services should include wide and varied pupil participation; but should be kept in proper balance with the rest of the educational program. There should be adequate management and coordination of the pupil services. The needs and welfare of the pupil should be considered before accepting his services.

THE MANAGEMENT OF STUDENT GOVERNMENT

Criterion One

Student government should be an outgrowth of school needs.

Children should have a chance to formulate rules that enable them to play together. They should share in planning classroom instruction, and have a larger share in planning extra-class activities.

Criterion Two

Participation in student government should be democratic.

There should be a respect for human personality; all pupils should have a part in the student government; and freedom of speech should be protected.

Criterion Three

The authority and responsibility of all concerned with student government should be clearly defined and understood.

It should be understood that in certain areas of legal responsibility the principal must have the power of veto. The responsibilities of the students in play areas should be clearly defined. Both teachers and pupils should understand clearly their responsibilities in the planning of instruction, and the limitations placed upon them in extra-class activities.

Criterion Four

Guidance without domination should be provided for those participating in student government.

Growth in leadership and self-discipline comes through practice. Guidance, not domination, is needed. It must be the pupil's self-government, not a teacher-dominated activity.

THE MANAGEMENT OF THE LUNCHROOM

Criterion One

The lunchroom should be considered an integral part of the educational opportunities of the school.

The lunchroom should be under the management of the school which should consider it in terms of service, instead of profit. Management of the lunchroom should capitalize on the opportunities for teaching basic facts or skills in everyday living. Details should be routinized.

The principal, as responsible head of the school, should delegate the authority and responsibility necessary to get the lunchroom job done.

Criterion Two

The lunchroom should be operated in accordance with basic business principles.

A simple, definite, uniform system of accounting should be effected and rigidly followed. All funds should be banked; payments should be made by check; and records should undergo an independent audit periodically. A continual inventory should be kept.

THE MANAGEMENT OF SCHOOL RECORDS

Criterion One

Those records required by law or significant to the educational program should be kept.

Records showing evidence of aptitudes, the nature of achievement, and the status of health will be needed. Evidence of growth in character should also be recorded. It should be recognized that some records are permanent by nature while others should be kept for a period of time and then destroyed.

Criterion Two

Records should be accessible to those who may need to see them.

Central records should be housed in such a way as to make them accessible to the teachers at all times without disturbing the principal. Certain records should be kept by the classroom teacher.

Criterion Three.

Records should be safeguarded.

Records should be housed in fireproof containers and their use controlled by uniform regulations.

Criterion Four

Records should be cumulative and in a form to permit efficient storage.

Records should be such that they present a complete picture, not just a fragment. The form needs to be compact in order that efficient storage can be provided.

RESULTS OF THE SURVEY

A comparison and study of the practices of 137 selected elementary schools indicated that the foregoing criteria were sound. Although, as might be expected, actual practices sometimes failed to measure up to a specific criterion, no evidence was brought to light that indicated that the criterion in question should be changed.

Practices failed to measure up to the criteria in the following areas: (1) inspection of the school plant, (2) efficient use of the school plant and grounds, (3) routines of supply, (4) application of business principles to supply, lunchroom, and financial management, and (5) library management.

Practices were more satisfactory in the management of (1) school assemblies, (2) public relations, and (3) pupil services.

As will have been noted, the criteria used in the study were common-sense in nature and their validity often self-apparent. Nevertheless, even in well-managed schools, practices measured in the light of them were, on the whole, far from satisfactory. It may be assumed that management practices in average and poor schools are much worse. Clearly much more attention needs to be given to this phase of elementary school administration than has been given in the past.

THE RELATIVE EFFORTS OF THE STATES TO SUPPORT PUBLIC EDUCATION

by RALPH CALVIN GEIGLE*

This study is concerned with: (1) the measurement of the relative efforts of the states to support public education; (2) the computation of a reliable index of expenditure; (3) the discovery of relationships between the factors "effort", "expenditure", and "ability"; (4) the identification of trends, if any, existing in each of these factors; (5) the examination of three refinements of fiscal indexes; and (6) an appraisal of the effect of federal aid on expenditures in the several states. The study covers each biennial year from 1929 through 1947.

Increasing difficulty in finding adequate support for social services has, in recent years, heightened interest in studies of state fiscal abilities. Since the public schools constitute one of the largest and oldest social agencies in the state, it is not surprising that many of these studies have been made by educators. However, other groups also have been interested in the relative fiscal abilities of states. Those concerned with federally aided unemployment relief and old-age benefits naturally have been concerned with this problem and have engaged in studies designed to throw light upon it.

All such studies have revealed great variance in the relative fiscal abilities of states and the inability of the poorest states to maintain even minimum standards for essential services. However, few have covered periods long enough to show significant trends. This study, covering a span of 10 bienniums, was undertaken in part to reveal such trends.

Since in this field of study there is some confusion in terminology, it was deemed necessary to define the more basic terms used. Such definitions follow.

Basic index of state fiscal ability. Total income payments to individuals as reported by the Department of Commerce.

Current expenditures. All expenditures in support of public schools exclusive of interest, debt service, and capital outlay.

Effort to finance education. The relation between the amount expended by a state of public schools and its financial resources measured in terms of its total individual income payments.

Adjusted current expenditures. Current expenditures reduced by both federal aid and subsidies, because such funds are available for school purposes without effort on the part of states to provide them.

Unit of educational need. Each child 5 to 17 years of age, inclusive.

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FISCAL ABILITIES OF THE STATES TO SUPPORT PUBLIC EDUCATION

Examination of the data for the respective geographical regions revealed that the Pacific, Middle Atlantic, and New England regions have been consistently the wealthiest; while the southern regions have been the poorest. On the basis of income payments per school-age child there was relative consistency in the ranks held by the respective states over the period of the study. Twenty-five of the forty-eight states shifted rank, up or down, at most two places. Conspicuous shifts in rank between 1929 and 1947, included New Hampshire, which declined ten places; Kansas, which gained ten places; and North Dakota, which gained seventeen places. The New England states have generally declined in rank, while the South Atlantic states have gained in rank. In 1929 the top-ranking state had income payments per school-age child seven times as great as the state of lowest rank. In 1947, the ratio between the states of highest and lowest rank was only nine to two. Thus, the variance in fiscal ability as measured by income payments showed a significant decline during the period covered by the study. Nor was this merely a phenomenon of the extremes of the distribution, since the interquartile range decreased in proportion.

Using 1929 as the base year, index numbers indicating fiscal ability were computed for each year. Disregarding dollar values, the fiscal ability of the United States as a whole per school-age child dropped 45 per cent below the 1929 level in 1933. The 1929 level was not regained until 1941, but following that year large increases above the 1929 level were shown. Since 1941, the greatest gains have been made by southern states and the least by Middle Atlantic, New England, and Pacific states.

EXPENDITURES OF THE STATES TO SUPPORT PUBLIC EDUCATION

States spending the most for education were those on the Pacific and Middle Atlantic coasts. The educational expenditures of North Central, New England, and Mountain states tended to be average, and of course the smallest expenditures were made by southern states.

As was expected, expenditures for schools were lowest in 1933. After that they gradually increased in all states, with large increases between 1945 and 1947. The sharp rise in expenditures came four years after similar increases in income.

The ranks of states in accordance with expenditures per school-age child changed greatly during the period covered by the study. Massachusetts declined thirteen places on the scale; North Dakota, sixteen; and Colorado, ten. On the other hand, Utah gained thirteen places, and Illinois, twelve. However, at the top and bottom of the scale there was relative stability. Throughout the period, Nevada, California,

New Jersey, and New York have made the highest expenditures; while Georgia, Arkansas, and Mississippi have consistently occupied bottom positions.

As was noted in the study of fiscal ability, there was a marked decline in the variance of expenditures per school-age child during the period of the study. For instance, in 1933, Nevada, the state spending the most per school-age child, expended $7\frac{1}{2}$ times as much as Arkansas at the bottom of the distribution. In 1947 Nevada spent only 3.77 times as much as Mississippi, the lowest state (\$206.91 compared with \$54.89). This equalization trend was confirmed by statistical analysis of the data.

To study the effect of federal aid on the variance of expenditures per school-age child, calculations of the estimated effect of the Barden bill were made. It appears that if enacted it would reduce the range of variance by about 16 per cent. The twelve richest states would receive about 13 per cent of the total appropriation or \$4.09 per school-age child, while the twelve poorest states would receive about 55 per cent of the total appropriation or \$22.57 per school-age child.

EFFORTS OF THE STATES TO SUPPORT PUBLIC EDUCATION

To determine relative efforts by states to support public education, effort indexes were computed using 1929 as the base year.

Considering the United States as a whole, effort to support education was greater between 1931 and 1941 than in 1929; or, putting it another way, the United States spent a larger percentage of its income on public education. After 1941 there was a sharp decline in effort. This tendency of expenditures to lag behind income was partially abated after 1945, but in 1947 the country was still making about 10 per cent less effort to support education than in 1929. Only the southern states were equalling 1929 efforts in 1947.

Throughout the period of the study, the Mountain and West North Central states spent the largest proportion of their incomes on education. During the same time, the New England states steadily lost rank on an effort scale; while the southern states made corresponding gains.

Variance in effort has also declined between 1929 and 1947, although the decline was smaller than that shown by fiscal abilities and school expenditures. In 1929 the effort of North Dakota was greatest and was 3.56 times that of Delaware which was least. In 1947 the effort of the highest state on the effort scale was only 2.29 times that of the lowest state on the scale. With the exception of the last subject year, Maryland has exerted the least effort to support public education, while North and South Dakota and New Mexico have exerted the greatest

efforts. The general tendency of variance in effort to decline was supported by statistical analyses.

RELATION OF EFFORT TO EXPENDITURE

Over the period covered by this study there was no significant correlation between the efforts exerted by the respective states to support public education and the amounts actually expended to support that education. In some states where expenditures per school-age child are high, great effort has been exerted. In other states it requires little effort to provide a high level of support. By the same token, there are states where the expenditure per school-age child is low but it requires a relatively large proportion of income payments to support this low level. Analyses revealed that in 1947 fifteen states made efforts greater than the United States average, yet all failed to provide expenditures per school-age child equal to the national average. Nearly all of these were southern states. They also revealed that eight of the states made less than average effort, yet provided more than average support per child.

RELATION OF ABILITY TO EXPENDITURE

As might be expected, there is a high correlation between the abilities and expenditures of the states to support public education. The correlation was highest in 1937 when it reached $+0.891$. If causation can be inferred, it is probable that the fiscal abilities of the states is the major determinant of how much is spent per school-age child. Calculation of "coefficients of determination" corroborated this finding. However, considering the United States as a whole, increases in expenditures for public education have not kept pace with increases in fiscal abilities.

RELATION OF EFFORT TO ABILITY

Efforts and fiscal abilities of the States to support public education consistently showed negative correlation. For instance, in 1947 the coefficient of correlation was -0.629 . These correlations indicated that states of great fiscal ability tend to put forth less effort in support of public education than those of low fiscal ability. Generally speaking, the greatest efforts are made by those states with the lowest fiscal abilities. Exceptions to be noted are New Jersey, Washington, Oregon, and Montana where above-average effort is associated with above-average fiscal ability. Between 1929 and 1933 the fiscal ability of the Nation dropped 26 per cent but school expenditures remained much more steady, dropping only 3 per cent. Between 1941 and 1943 fiscal abilities increased 53.4 per cent while expenditures increased only 12.3 per cent. Additional statistical analysis confirmed the finding that

fluctuations in school expenditures tend to be less than fluctuations in fiscal abilities.

ADJUSTMENT OF STATE EFFORT INDEXES BASED ON PRIVATE AND PAROCHIAL SCHOOL ENROLLMENTS

It has occurred to some that the degree of variability recorded can be partially explained by the presence of varying percentages of children of school age attending private and parochial schools. This possibility was explored.

Analyses of the data show small increases in the percentages of children enrolled in private and parochial schools during the period of the study. After reaching a low point (9.06 per cent in 1935) during the depression, the percentage enrolled in private and parochial schools increased with some consistency to about 11 per cent in 1947. Rhode Island enrolled 28 per cent of its children of school age in private and parochial schools in 1947. In the same year less than 3 per cent were so enrolled in 13 states.

If it is assumed that the cost per pupil enrolled in private and parochial schools is the same as that in public schools, inclusion of private and parochial school enrollments makes a number of changes in the ranks of states according to effort. For instance, based on 1947 data Vermont would gain thirteen places and Georgia would lose ten places. The wealthiest states have the greatest proportion of children in private and parochial schools and thus would show the largest increases in effort indexes if private and parochial school enrollments were included in the calculations.

ADJUSTMENT OF STATE ABILITY INDEXES BASED ON VARYING PERCENTAGES OF CHILDREN IN A POPULATION

Harold F. Clark has suggested that the amount of education available is not in simple inverse ratio to the number of children to be educated. Instead, he is of the opinion that twice the number of children in relation to the adult population is likely to reduce to one-fourth the amount of education that can be supplied for each child. This suggested formula was applied to the data used in the study with some interesting results.

In 1947 in the State of South Carolina there was approximately one adult for each child, while in New York and New Jersey there were more than two and one-quarter adults per child. The application of Clark's suggested formula to these states indicated greater disparities in educational opportunities than the earlier calculations of this study. When applied to all the states, fiscal ability ranks were considerably changed. For instance, New Hampshire gained ten places and North Dakota lost eight places.

ADJUSTMENT OF STATE EFFORT INDEXES BASED ON THE AMOUNTS
WITHDRAWN IN THE FORM OF FEDERAL TAXES

Tax incidence data were either computed or were available in memoranda of the Bureau of Research and Statistics of the Social Security Administration. These were used to determine the effects of the federal tax system upon income payments. In 1941, the "federal tax drain" in Delaware was more than three and one-half times that in Mississippi, while that in Nevada was considerably more than twice as great as that in North Dakota. In 1945, the drain in Delaware was approaching 40 per cent of total income payments while in Nevada, California, Illinois, New York, and Rhode Island those taxes having incidence on individual income payments approximated 20 per cent. During the period of the study the number of states seriously affected by federal incidences tended to increase. In terms of effort ranks for 1945 (adjusted and unadjusted), it was noted that pronounced shifts upward occurred for Delaware, Nevada, New York, Michigan, and Pennsylvania, while downward shifts occurred in the cases of Mississippi, Arkansas, Alabama, and Vermont. If, in calculating the efforts of states to support public education, federal taxes are taken into consideration, Delaware, Nevada, New York, Michigan, and Pennsylvania move upward on the effort scale and Mississippi, Arkansas, Alabama, and Vermont move downward.

It is evident that indexes of fiscal ability and effort should take into consideration the effects of federal taxation as well as private and parochial school enrollments.

